YAMAHA

Virtual Acoustic Synthesizer

VP1

OWNER'S MANUAL

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord

IMPORTANT: The wires in this mains lead are coloured in accordance with the following code:

GREEN-AND-YELLOW	:	EARTH
BLUE	:	NEUTRAL
BROWN	:	LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured GREEN and YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol or coloured GREEN and YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

Bescheinigung des Importeurs

Hiermit wird bescheinigt, daß der/die/das

Gerät: Synthesizer Typ: VP1
(Gerät, typ, Bezeichnung)

in Übereinstimmung mit den Bestimmungen der

VERFÜGUNG 1046/84
(Amtsblattverfügung)

funkentstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Yamaha Europa GmbH
Name des lmporteurs.

* Dies bezieht sich nur auf die von der YAMAHA EUROPA GmbH vertriebenen Produkte.

ADVARSEL!
Lithiumbatteri—Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandoren.

VARNING
Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

Dette apparat overholder det gaeldende EF-direktiv vedrørende radiostøj.

Cet appareil est conforme aux prescriptions de la directive communautaire 87/308/CEE.

Diese Geräte entsprechen der EG-Richtlinie 82/499/EWG und/oder 87/308/EWG.

This product complies with the radio frequency interference requirements of the Council Directive 82/499/EEC and/or 87/308/EEC.

Questo apparecchio è conforme al D.M.13 aprile 1989 (Direttiva CEE/87/308) sulla soppressione dei radiodisturbi.

Este producto está de acuerdo con los requisitos sobre interferencias de radio frequencia fijados por el Consejo Directivo 87/308/CEE.

YAMAHA CORPORATION

Virtual Acoustic Synthesizer **VP1**

Owner’ s Manual

Thank you for your purchase of the Yamaha VP1 Virtual Acoustic Synthesizer. The VP1’s revolutionary VA sound system offers a range of sounds and performance features not available from ordinary synthesizers.

Please read through this manual to familiarize yourself with the VP1’s operation and its many superlative functions. Retain the manual in a safe place for future reference.

Features

Revolutionary Virtual-Acoustic Sound System

The VP1's VA (virtual acoustic) sound production is entirely different from techniques used on conventional synthesizers. The system generates a computerized model of the target instrument's acoustic characteristics, creating a virtual instrument that sounds and feels like the real thing.

Conventional synthesizers create sound by mixing monotone oscillations or by processing a memorized set of waveform samples. Results are often uninteresting, or too far from what you are aiming at. You can try to improve the sound by manipulating a host of seemingly arbitrary settings, but the process frequently becomes tedious and discouraging.

Yamaha's VA system changes this picture entirely. Operation is intuitively reasonable, and the resulting sound is far more realistic.

The VP1 utilizes an F/VA (free-oscillating VA) sound system — one of the two variants of the VA approach. The system creates a computerized model consisting of two modules: a "driver" component and a "string" component. The driver component simulates the action of the striking system (analogous to the action of a pick or finger against a guitar string), while the string component simulates the action of the vibrating system (analogous to the combination of the guitar's string, fret, and bridge). The VP1 fine-tunes the properties of each of these modules to produce a virtual instrument with an extremely realistic sound.

You can use the VP1 to reproduce the sound of existing acoustic instruments, or to design fanciful virtual instruments that could never exist in the real world. Regardless of the type of instrument you choose, the resulting sound will have an authentic, real-world quality not available from conventional synthesizers.

Powerful Controllers

The VP1's powerful controllers allow you to achieve an expressive range previously available only to skilled performers of acoustic instruments.

Consider a guitar player. The guitarist's sound is determined not just by the finger on the fret and the pick against the string. Many different actions are involved — the force and direction of the pick, the left hand's muting, vibrato, glissando, and trill effects, the right hand's muting and harmonic effects, the motion of the right arm, and so on.

It would be impossible to simulate all of these different actions using only the keyboard. This is why the VP1 supports a full assortment of controllers — a pitch wheel, two modulation wheels, a two-directional modulation ball, a breath controller, two foot controllers, two foot switches, and two continuous sliders. By mastering the use of these controllers, you can achieve a high level of expressiveness on any voice you happen to be playing.

Generally speaking, each controller governs a single parameter. But each time you change the voice, the VP1 changes the parameter assignments accordingly — ensuring that you always have significant control over the most important features of the voice you are playing. You are also free to rearrange the parameters among the different controllers so as to achieve the configuration best suited to your own playing style.

The VP1's controller features allow you break through the barriers of electronic instrumentation to achieve a level of control previously limited to acoustic instruments.

Kaleidoscopic "Scene" Control

The VP1 can store all controller settings into a single "scene". You can register up to three of these scenes, and recall any one of them at the press of a button. Or you can use the Scene Controller to fade seamlessly from one scene into another, stopping at any intermediate value along the way. This unique "scene" concept allows you to produce unprecedented multidimensional sound changes.

High-Quality Effects

The VP1 offers five times as many as effects the SPX1000 — reverb, flanger, delay, chorus, and many more. You can set these effects separately for each voice.

Professional Features

■ Professional Parallel Output

The VP1 processes effects internally to produce high-quality stereo output. You are also free to select monaural output.

The VP1 also produces separate stereo outputs for each of the four elements comprising the voice. You can connect all of these outputs to a mixer and add external effects.

■ First VA System with 16-Note Polyphony

The VP1 is the world's only VA system capable of producing 16-note polyphony. The four-element voice structure affords ample capability for setting up complex multilayered and split voices.

■ Superlative Design

The VP1's FS76 keyboard already enjoys a high reputation among professional musicians. All VP1 controllers are equipped with multicolor LEDs, allowing you to ascertain controller conditions at a glance. And the instrument's top and rear panels are finished with high-quality real wood trim. Each panel has its own unique grain pattern, so that no two synthesizers look exactly alike.

■ Complexity

The VP1 simulates an acoustic instrument not only in sound but also in sophistication and complexity. Like an acoustic instrument, the VP1 requires — and amply rewards — practice. As you master the instrument's controllers and functions, you will gradually attain your own unique, personalized performance style.

Using The Manual

The manual you are holding is divided into two main sections — BASICS and REFERENCE.

BASICS

This section introduces you to basic information that will help you become familiar with your synthesizer. The section explains various precautions, tells you how to connect up the synthesizer, takes you through a trial run, and describes the basic principles of operation and sound production.

Users who are unfamiliar with the VP1 should read through the entire BASICS section carefully.

■ Chapter 1 Setting It Up

This chapter introduces you to the different components and explains how to connect everything up.

■ Chapter 2 Trying it Out

Chapter 2 takes you through a trial run and introduces some of the VP1's operational basics. It also explains how to play the synthesizer's built-in demos.

■ Chapter 3 Learning the Basics

Chapter 3 describes the principles of operation, and explains the functioning of controllers and other features.

REFERENCE

The REFERENCE section offers detailed explanations of the VP1's different functions. It describes in detail the various methods for implementing performance, voice, and controller settings, and for writing data to or from the floppy disk.

You do not need to read through the REFERENCE section in its entirety. Use it as a ready reference, turning to the relevant pages whenever you need to learn more about a particular function.

■ Chapter 1 PLAY Mode

This chapter provides comprehensive explanations of the functions for selecting, playing, and editing voices.

■ Chapter 2 SYSTEM Mode

Chapter 2 explains system-wide settings related to sound production, keyboard operation, MIDI, and controllers.

■ Chapter 3 DISK Mode

This chapter describes the VP1's various disk functions. It explains how to save data to disk, load data from disk, format new disks, and rename existing disk files.

■ Appendix

The Appendix describes the system's error messages and offers some advice on troubleshooting.

Please refer also to the separately bound "Performance Notes" for a full listing of the VP1's original voices and functions.

Notations

The following notational conventions are used throughout the manual to enhance clarity and readability.

PLAY

Denotes the PLAY button. All buttons are indicated by a rounded rectangular border enclosing the button (function) name. Note that the function name also appears on the synthesizer panel directly above or below the corresponding button. Some buttons have two functions, with the name of the secondary function written in purple lettering on the panel. When referring to the purple-lettered function, we use the following type of notation: "F1:E1", where "F1" denotes the button's usual function and "E1" denotes the function indicated in purple.

When referring to a function button (F1 ~ F8), we write the symbol for the button followed by the name of the operation that the button selects. For example: F1:Info.

Important

An important note or precaution intended to help you avoid loss of data or other major inconvenience. Always read these notices carefully.

FYI (For your information)

Reference information indirectly related to the content of the main text. May contain practical advice or general supplementary information.

Procedure

Step-by-step instructions for carrying out a particular function or operation.

Description

General description of one of the VP1's functions.

(→ BASICS: ○ - ○) (→ REFERENCE: ○ - ○)
Directs you to another page for related information.

Within the REFERENCE section, all function descriptions begin with a fixed-format heading summarizing important information about the function. An example is shown below.

Name of function

Procedure for entering the function

Brief description

CONTROLLER ASSIGN TABLE: Control Range

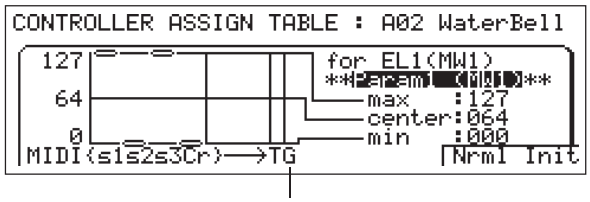
PLAY → F4 (CTbl) → F1 ([Rng])

Determines the degree by which a parameter value changes in response to controller movement.

Max	0 ~ 127
Center	0 ~ 127
Min	0 ~ 127

Settable items (Listed in the order that they appear on the screen).

Allowable values



Display

Contents

All page numbers begin with a letter indicating the section: “B” for BASICS, or “R” for REFERENCE.

BASICS

Chapter 1 Setting It Up

Controls and Connectors ..... B: 1 - 2
- Top Panel ..... B: 1 - 2
- Rear Panel ..... B: 1 - 6
- Front Side ..... B: 1 - 8

Connecting the System ..... B: 1 - 9
- Connecting the Power Cord ..... B: 1 - 9
- Connecting the Controllers ..... B: 1 - 10
- Connecting Amplifiers or Mixer ..... B: 1 - 12
- MIDI Connection ..... B: 1 - 14

The Floppy Disk ..... B: 1 - 16

MIDI ..... B: 1 - 17

Chapter 2 Trying It Out

First Try ..... B: 2 - 2
- Checking the Sound Output ..... B: 2 - 2
- Trying Some Voices ..... B: 2 - 3
- Using the Controllers ..... B: 2 - 4
- Using Quick Edit ..... B: 2 - 6

Playing the Demos ..... B: 2 - 8

Chapter 3 Learning the Basics

Sound Production ..... B: 3 - 2
- F/VA Sound Synthesis ..... B: 3 - 2
- Physical Characteristics of Struck-String Instruments ..... B: 3 - 2
- Driver ..... B: 3 - 3
- String ..... B: 3 - 3
- Editing Limitations ..... B: 3 - 3

Voice Formation ..... B: 3 - 4
- Elements ..... B: 3 - 4
- Mixer ..... B: 3 - 5
- Voices ..... B: 3 - 5

Contents

Memory Configuration ..... B: 3 - 6
- System Data ..... B: 3 - 6
- Voice Data ..... B: 3 - 6
- Floppy Disks ..... B: 3 - 7

Controllers ..... B: 3 - 8
- Principle of Operation ..... B: 3 - 8
- Innovative Controller Types ..... B: 3 - 9

Scenes ..... B: 3 - 11
- What is a Scene? ..... B: 3 - 11
- Scene Controller ..... B: 3 - 12
- Scene LEDs ..... B: 3 - 13
- Controller Hook Function ..... B: 3 - 14
- Controller LEDs ..... B: 3 - 15
- Controller Initialization Function ..... B: 3 - 15

Quick Edit ..... B: 3 - 16
- General Description ..... B: 3 - 16
- Using Quick Edit ..... B: 3 - 17
- Storing Results ..... B: 3 - 17
- Quick-Edit Parameters ..... B: 3 - 18
- MIDI Quick Edit Control ..... B: 3 - 20

Voice Categories ..... B: 3 - 21
- Category Listing ..... B: 3 - 21

Modes ..... B: 3 - 22
- PLAY Mode ..... B: 3 - 22
- SYSTEM Mode ..... B: 3 - 22
- DISK Mode ..... B: 3 - 22

Basic Operations ..... B: 3 - 23
- Switching the Mode ..... B: 3 - 23
- Selecting a Voice ..... B: 3 - 23
- Selecting a Function ..... B: 3 - 24
- Returning to Previous Screen ..... B: 3 - 24
- Moving the Cursor ..... B: 3 - 24
- Changing Numerical Settings ..... B: 3 - 25
- Changing Multiple-Choice Settings ..... B: 3 - 25
- Entering Characters ..... B: 3 - 26

Voice Editing ..... B: 3 - 27
- General Editing Procedure ..... B: 3 - 27
- Storing ..... B: 3 - 28
- Comparing ..... B: 3 - 30
- Copying ..... B: 3 - 30
- ELEMENT SELECT and ELEMENT ON/OFF ..... B: 3 - 31

Contents

REFERENCE

Chapter 1 PLAY Mode

Outline ····· R: 1 - 2

Performance and Status ····· R: 1 - 3
Functions ····· R: 1 - 3
PLAY ····· R: 1 - 4
INFORMATION DISPLAY ····· R: 1 - 5
CONTROLLER VALUE VIEW ····· R: 1 - 6
KEYBOARD TRANSMIT CHANNEL ····· R: 1 - 7
VOICE DIRECTORY ····· R: 1 - 8

Editing Functions ····· R: 1 - 9
CONTROLLER ASSIGN TABLE ····· R: 1 - 10
CONTROLLER ASSIGN TABLE: Control Range ····· R: 1 - 12
SCENE ····· R: 1 - 14
VOICE SETUP ····· R: 1 - 16
VOICE SETUP: Element Switch ····· R: 1 - 17
VOICE SETUP: Max Notes ····· R: 1 - 18
VOICE SETUP: Receive Channel ····· R: 1 - 19
VOICE SETUP: Key Assign Mode ····· R: 1 - 20
VOICE SETUP: Volume ····· R: 1 - 22
VOICE SETUP: Detune ····· R: 1 - 23
VOICE SETUP: Note Shift ····· R: 1 - 24
VOICE SETUP: Pan Range ····· R: 1 - 25
VOICE SETUP: Note Limit ····· R: 1 - 27
VOICE SETUP: Microtuning ····· R: 1 - 28
VOICE SETUP: Portamento Mode ····· R: 1 - 30
VOICE SETUP: Portamento Resolution ····· R: 1 - 31
VOICE SETUP: PB Range ····· R: 1 - 32
VOICE SETUP: PB Curve ····· R: 1 - 33
VOICE SETUP: Zoned Aftertouch Mode ····· R: 1 - 35
VOICE SETUP: Zoned Aftertouch Split ····· R: 1 - 36
VOICE SETUP: Sustain ····· R: 1 - 37
VOICE SETUP: Element Copy ····· R: 1 - 38
OUTPUT: MIXER ····· R: 1 - 41
OUTPUT: EFFECTS ····· R: 1 - 43
Effect Types ····· R: 1 - 44
Effects Parameters ····· R: 1 - 45
OUTPUT: Effect Copy ····· R: 1 - 50
OUTPUT: Equalizer ····· R: 1 - 51
OUTPUT: Equalizer Copy ····· R: 1 - 53
STORE ····· R: 1 - 54
COMPARE ····· R: 1 - 56

Contents

Chapter 2 SYSTEM Mode

Outline ..... R: 2 - 2

SYSTEM Functions ..... R: 2 - 3

TONE GENERATOR SETTINGS ..... R: 2 - 4
KEYBOARD SETTINGS ..... R: 2 - 6
MIDI SETTINGS ..... R: 2 - 8
ASSIGNABLE CONTROLLERS ..... R: 2 - 10
GREETING MESSAGE ..... R: 2 - 12
MISCELLANEOUS SETTINGS ..... R: 2 - 13

Chapter 3 DISK Mode

Outline ..... R: 3 - 2

DISK Functions ..... R: 3 - 3

LOAD ALL DATA ..... R: 3 - 4
LOAD 1 BANK ..... R: 3 - 5
LOAD 1 VOICE ..... R: 3 - 7
SAVE ALL DATA ..... R: 3 - 9
RENAME ..... R: 3 - 11
FORMAT ..... R: 3 - 12

Appendix

Function List ..... R: Appendix - 2

Troubleshooting ..... R: Appendix - 5

Error Messages ..... R: Appendix - 9

Specifications ..... R: Appendix - 11

MIDI Data Format ..... R: Appendix - 14

MIDI Implementation Chart ..... R: Appendix - 20

Index

Index ..... Index - 2

BASICS

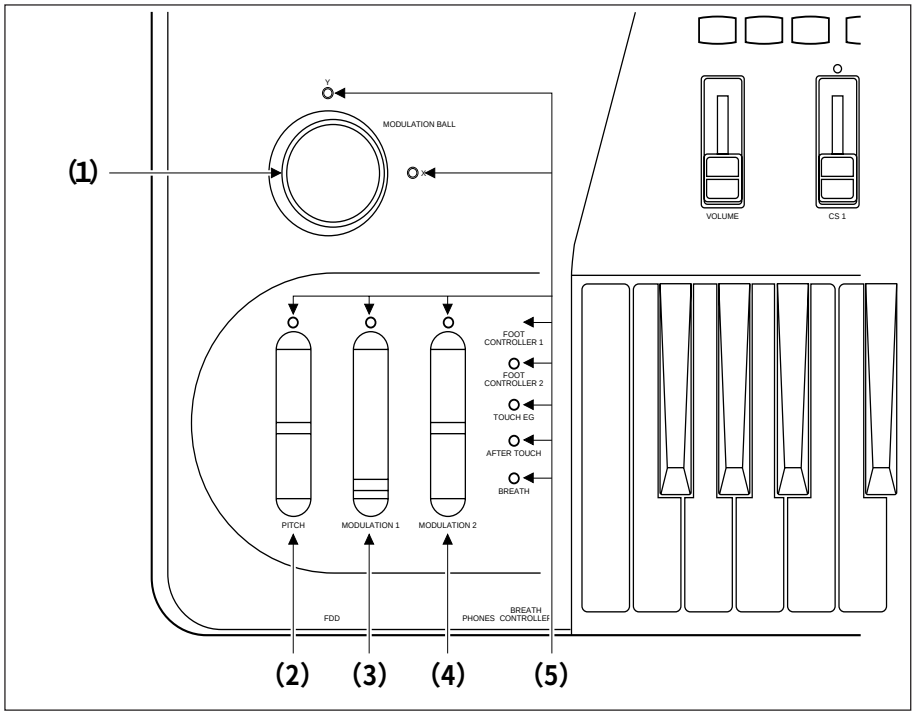
Chapter 1

Setting It Up

This chapter introduces the VP1's various controls and connectors, and explains how to connect everything up. Users unfamiliar with the VP1 should read this chapter carefully.

Controls and Connectors

Top Panel



(1) MODULATION BALL

Use this ball to simultaneously control two different parameter values during performance. Rotation in the X direction controls one parameter, while rotation in the Y direction controls the other. Control effects differ for each voice. (→ BASICS: 3-9)

(2) PITCH wheel

Provides continuous variation of pitch. Depending on voice settings, wheel operation may also affect other sound qualities.

(3) MODULATION 1 wheel

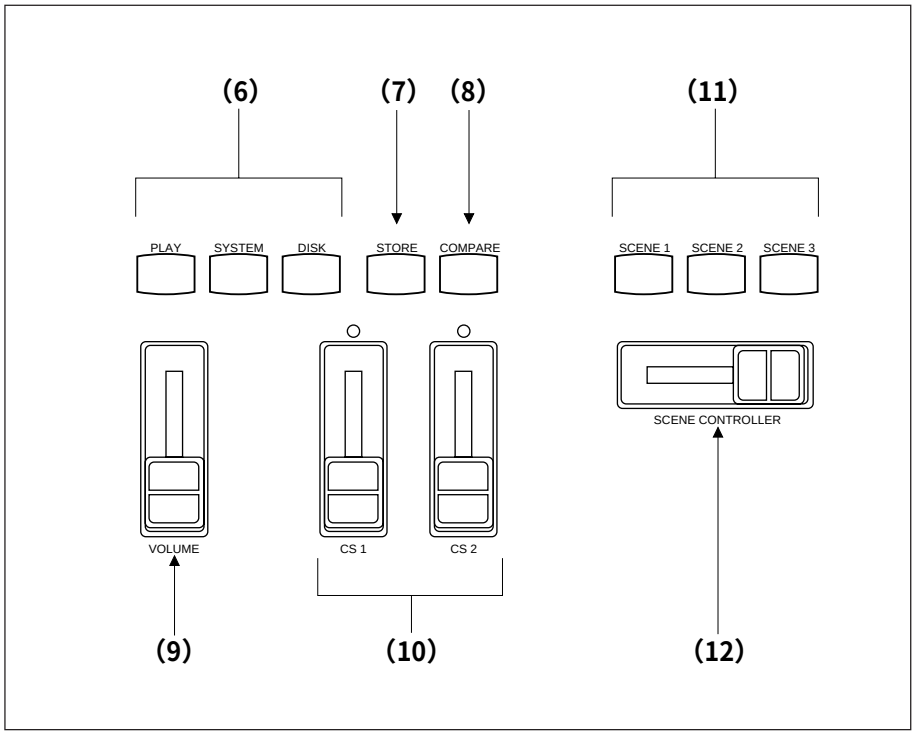
Controls one voice parameter during performance. The actual effect differs for each voice.

(4) MODULATION 2 wheel

Controls one voice parameter during performance, where the actual effect depends on the voice. Unlike the MODULATION 1 wheel, this wheel includes a center click-stop.

(5) Controller LEDs

Each LED indicates the status of the corresponding controller. GREEN means that the controller is currently effective, SOLID RED means that the controller is outside of its effective range, and FLASHING RED means that the controller is currently effective on some elements only. OFF means that the controller is currently unassigned. (→ BASICS: 3-15)



(6) PLAY button
SYSTEM button
DISK button

Each button selects the corresponding mode. The PLAY button always switches the display to the initial PLAY screen. (→ BASICS: 3-22)

(7) STORE button

Stores an edited voice to internal memory, or copies an existing voice to another location (a different "voice number"). (→ BASICS: 3-28)

(8) COMPARE button

Use this button to compare the sound of the voice you are editing with the sound of the same voice before editing began. (→ BASICS: 3-38)

(9) VOLUME slider

Adjusts the output volume. Note that this slider has no effect on the output levels at the ELEMENT jacks.

(10) CS1 and CS2 (Continuous sliders)

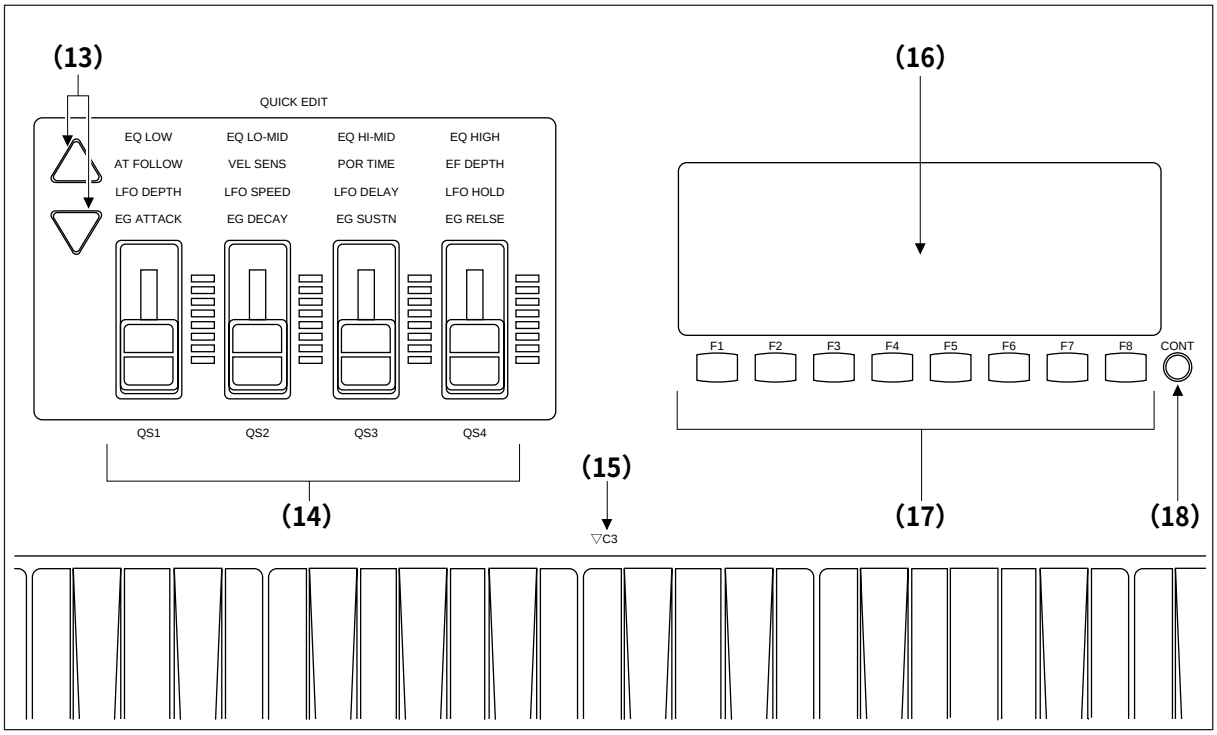
These sliders provide real-time control of voice parameters during performance. Actual effects differ for each voice.

(11) SCENE 1, SCENE 2, and SCENE 3 buttons

The VP1 memorizes up to three complete sets of controller settings, or "scenes". Pressing one of the SCENE buttons reestablishes the corresponding set of controller settings.

(12) SCENE CONTROLLER

Use this controller to slide continuously from one scene into another. The center click-stop position selects Scene 2. (→ BASICS: 3-12)



(13) QUICK EDIT selectors (△ and ▽)

Use these to select the functions to be controlled by the QUICK EDIT sliders. (→ BASICS: 3-16)

(14) QS1, QS2, QS3, and QS4 (Quick-edit sliders)

Use these sliders for quick editing. The LEDs along the right side of each slider indicate the slider's position. If the slider is at center position, the two middle LEDs will be on. (→ BASICS: 3-17)

(15) C3 key mark

Marks the position of note C3 on the keyboard. The marking is not meaningful if the keyboard has been transposed.

(16) Display

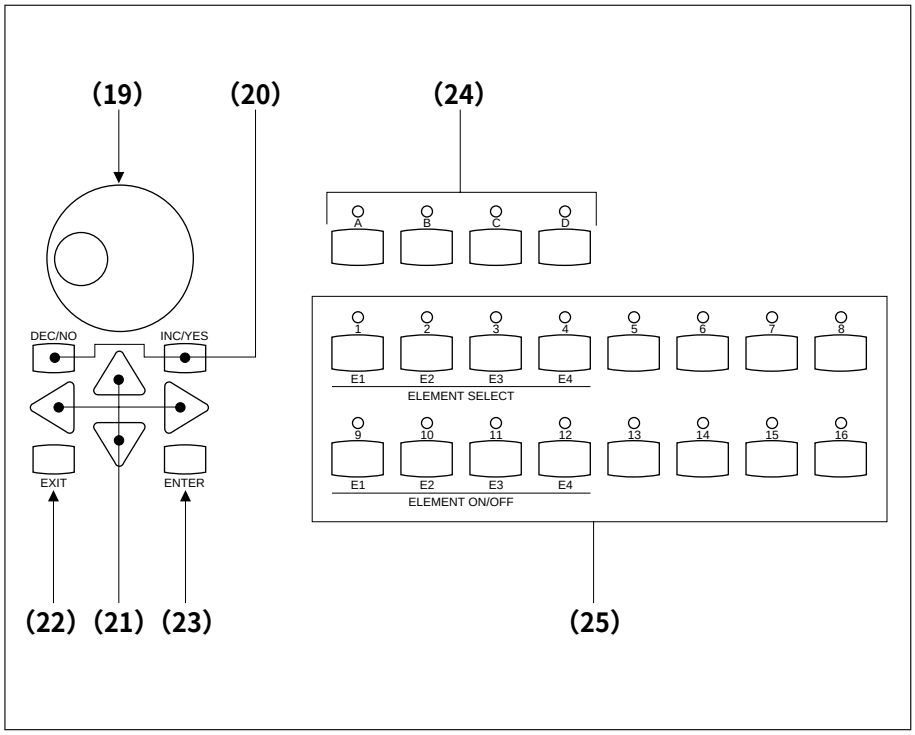
The LCD displays the name of the currently selected voice, together with various status information. Characters may be displayed black-on-white or white-on-black. (→ REFERENCE: 2-13) The screen's contrast level may change slightly over the course of a long session; adjust as necessary using the CONT knob. (→ REFERENCE: 2-13)

(17) F1 to F8 (Function buttons)

Use these buttons to select various functions while playing or editing. The bottom line of the LCD indicates the currently available functions.

(18) CONT knob

Adjusts the LCD's contrast.



(19) Dial

Use to switch voices or to change a numerical or character value. The magnitude of change varies in proportion to the speed of dial rotation.

(20) DEC/NO button
INC/YES button

Press to increment or decrement a numerical or character value, or to answer "YES" or "NO" to a confirmation query.

(21) Cursor buttons

Use these buttons to move the screen's cursor to a different menu item or value.

(22) EXIT button

Use this button to exit from the currently displayed screen (submode), returning the LCD to the next higher-level screen.

(23) ENTER button

Press this button to select or execute a function.

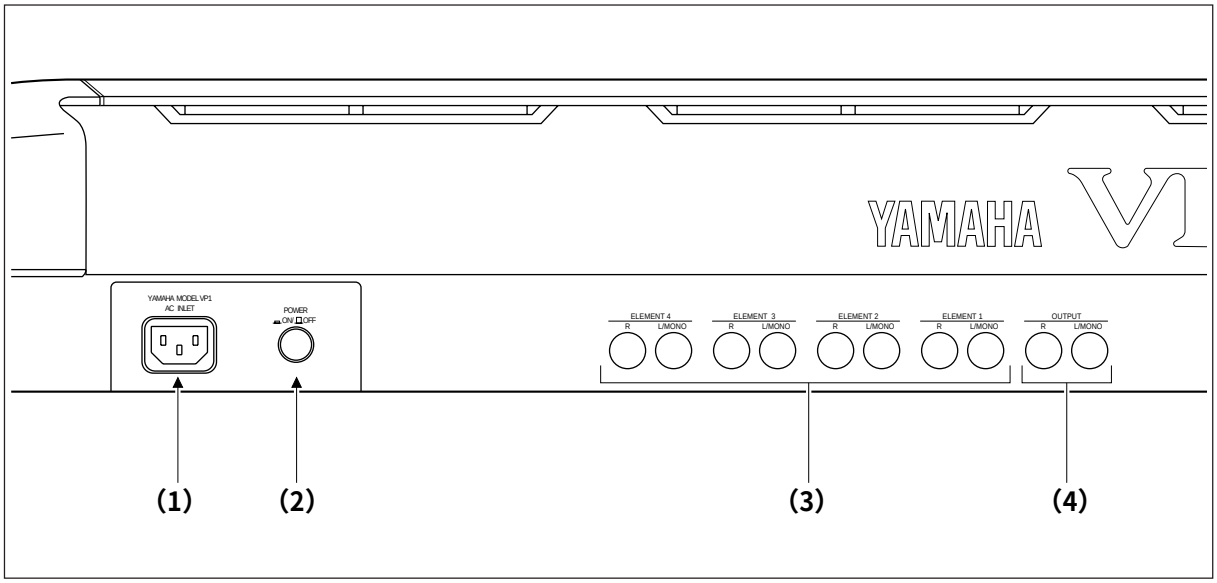
(24) A to D: Voice bank buttons

Use these buttons to select the voice bank (A to D).

(25) 1 to 16: Program buttons

Use these buttons to select a voice (by voice number) from the current voice bank. During voice editing, buttons 1 to 4 select voice elements, and buttons 9 to 12 toggle voice elements on and off. (→ BASICS: 3-31)

Rear Panel



(1) Power-cord connector

Connects to the AC power cord supplied with the VP1. (Please do not use any other power cord with the VP1.)

(2) POWER switch

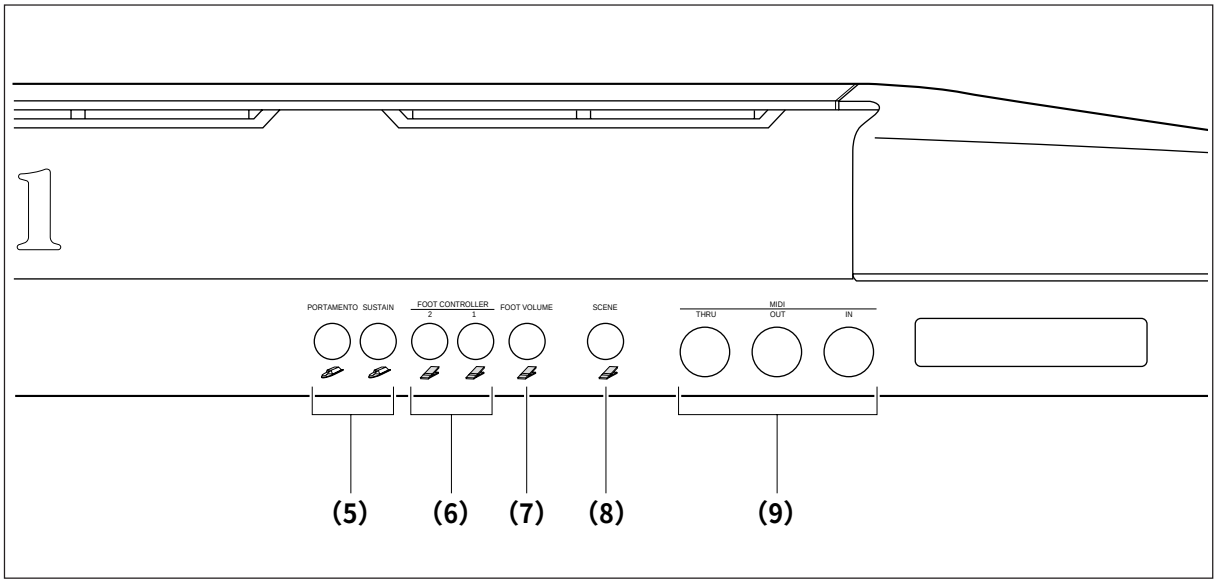
Press to switch the power ON or OFF. Power is ON when the switch is in depressed position; OFF when it is in raised position.

(3) ELEMENT jacks: L/MONO, R

Each set of jacks outputs one of the four elements comprising the voice. Each element is output in stereo: the L/MONO jack outputs the left channel, and the R jack outputs the right channel. For monaural output, use the L/MONO jack.

(4) OUTPUT jacks: L/MONO, R

These jacks output the full sound produced by combination of all elements plus effects. The L/MONO and R jacks output the left and right channels, respectively. For monaural output, use the L/MONO jack.



(5) PORTAMENTO and SUSTAIN jacks

Each of these jacks accepts connection to an FC4 or FC5 foot switch. A foot switch connected to the SUSTAIN jack operates as a damper pedal; a foot switch connected to the PORTAMENTO jack controls the portamento effect.

(6) FOOT CONTROLLER jacks

Each jack accepts connection to an FC7 or FC9 foot controller. During performance, each controller controls the value of one of the voice parameters. The actual effects are different for each voice.

(7) FOOT VOLUME jack

This jack accepts connection to an FC7 or FC9 foot controller. The connected controller operates as a volume pedal.

(8) SCENE jack

This jack accepts connection to an FC7 or FC9 foot controller. The connected controller operates as a scene controller.

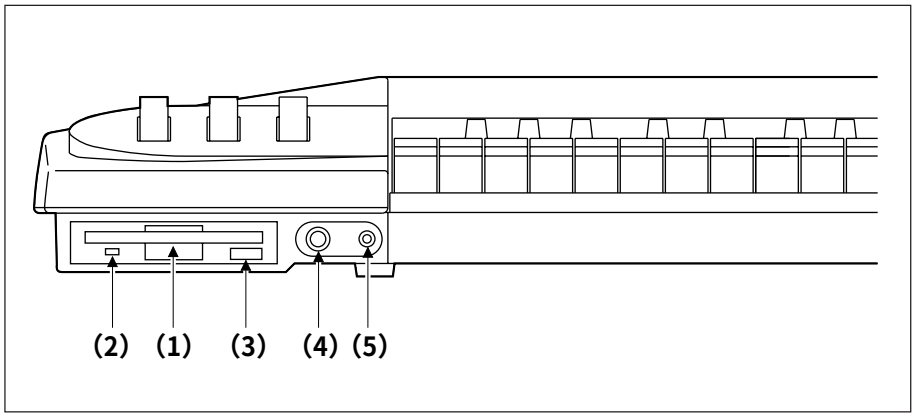
(9) MIDI connectors (IN, OUT, THRU)

These connectors attach to standard MIDI cables. The IN connector receives MIDI input, the OUT connector transmits MIDI data produced within the VP1, and the THRU connector relays data received at the IN connector.

FYI

- For hints about how to connect up the controllers supplied with your VP1, refer to "Connecting the Controllers," below. (→ BASICS: 1-10)

Front Side



(1) Floppy-Disk Drive

The slot accepts insertion of a 3.5-inch 2HD (MF2HD) floppy disk.

(2) In-Use LED

This LED lights up while the VP1 is reading from or writing to the floppy disk.

(3) EJECT button

Pressing this button ejects the floppy disk from the slot. Never press this button while the In-Use LED is lit. Always proceed slowly and carefully when inserting or removing a disk.

(4) Headphone jack

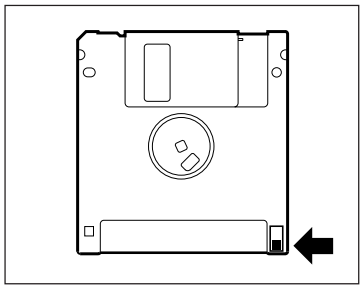
Connects to standard stereo headphones. Headphone impedance should be between 8 and 150 ohms. Yamaha recommends the use of model HPE-170 headphones.

(5) Breath-controller jack

This jack connects to a BC2 or BC1 breath controller (sold separately). Like other controllers, the breath controller provides dynamic control over one of the assignable sound parameters.

FYI

- A “write-protect tab” is located on the rear side of the floppy disk casing. Setting the tab to the lower position — so that the window is open — makes it impossible to write to or delete from the disk. If your disk contains important data, you may want to set the tab downward to protect against accidental data loss.



Connecting the System

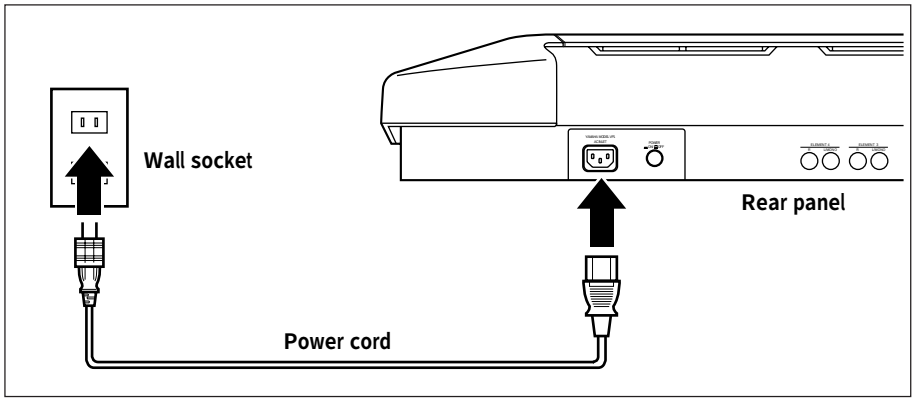
Before you can use the system, you must first connect up the power cord and various accessories, such as amplifiers and controllers. If you plan to use a sequencer, controller, or external MIDI device, you must also make the necessary MIDI connections.

Important

- Be sure the power is off before making any connections. Amplifiers or speakers may suffer damage if connections are made while power is on.

Connecting the Power Cord

Connect the supplied power cord to the power-cord connector on the VP1's rear panel. Then plug the other end of the cord into a standard wall socket.



Important

- Be sure that the wall socket is rated for 120V (USA and Canada) or 220-240V (Europe) general domestic use.

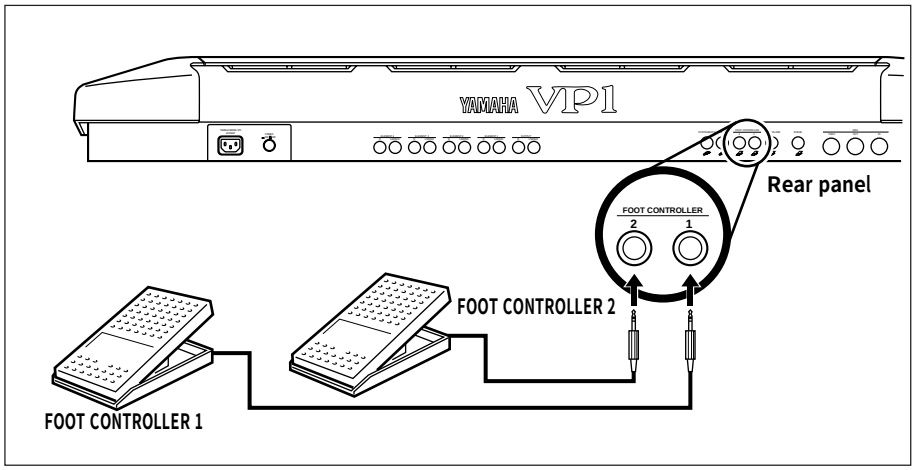
Connecting the Controllers

Here we describe the more common connection configurations for the foot controllers and foot switch supplied with the VP1. Numerous other configurations are possible — you can connect to different jacks, and you can purchase and connect additional controllers. Feel free to experiment with different configurations.

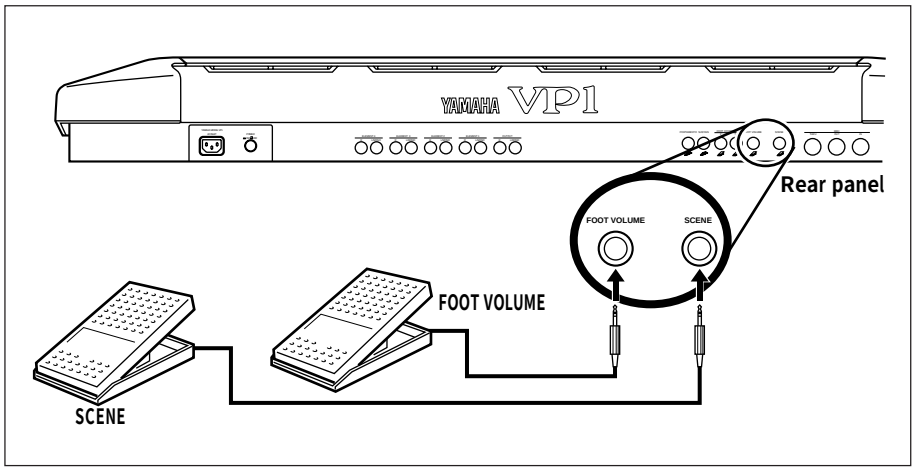
■ Foot Controllers

Plug the two FC7 foot controllers into the appropriate jacks on the rear panel.

Recommended:



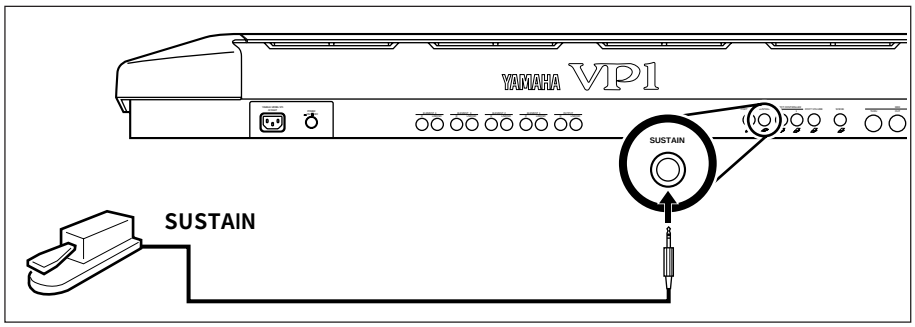
Alternative:



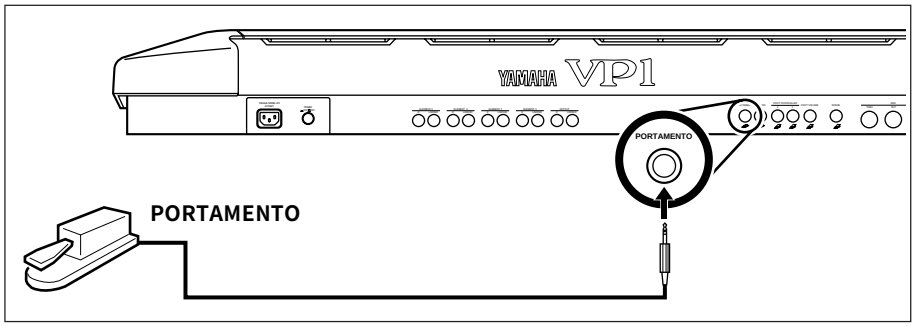
■ Foot Switch

Plug the FC4 foot switch into the SUSTAIN or PORTAMENTO jack on the rear panel.

Recommended:



Alternative:



■ Breath Controller

The VP1 accepts connection of an optional breath controller (model BC2 or BC1). The breath controller connects to the breath-controller jack on the front panel.

FYI

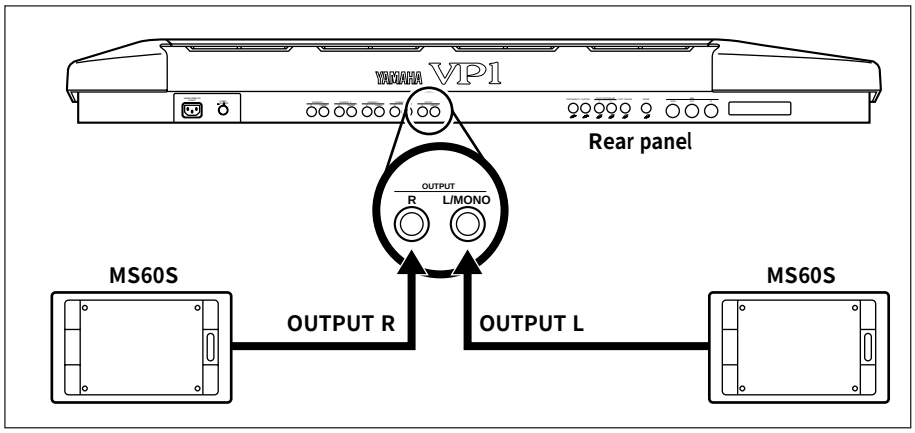
- The VP1 supports the use of FC7 and FC9 foot controllers, and FC4 and FC5 foot switches.

Connecting Amplifiers or Mixer

The VP1 produces audible output via amplifiers, mixers, or other such sound-reproducing devices. For private listening, you can simply plug a set of stereo headphones into the unit's headphone jack.

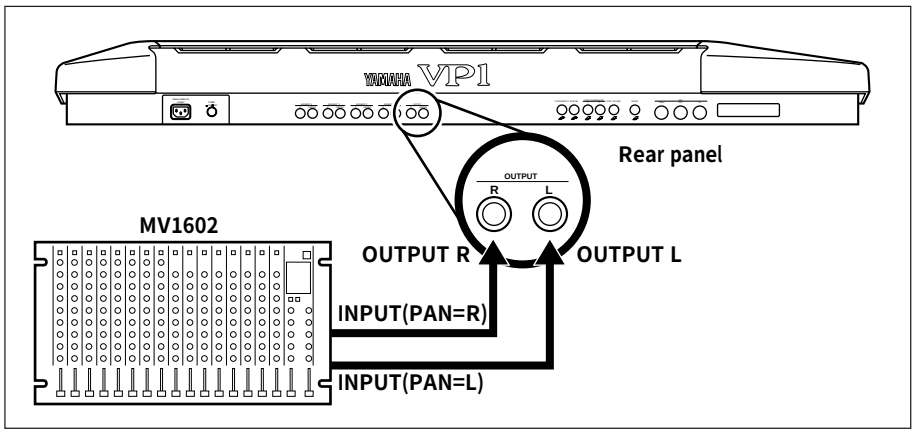
■ Amplifiers

Connect one amplifier to the L/MONO OUTPUT jack, and another to the R OUTPUT jack. For monaural operation, connect to the L/MONO jack only.



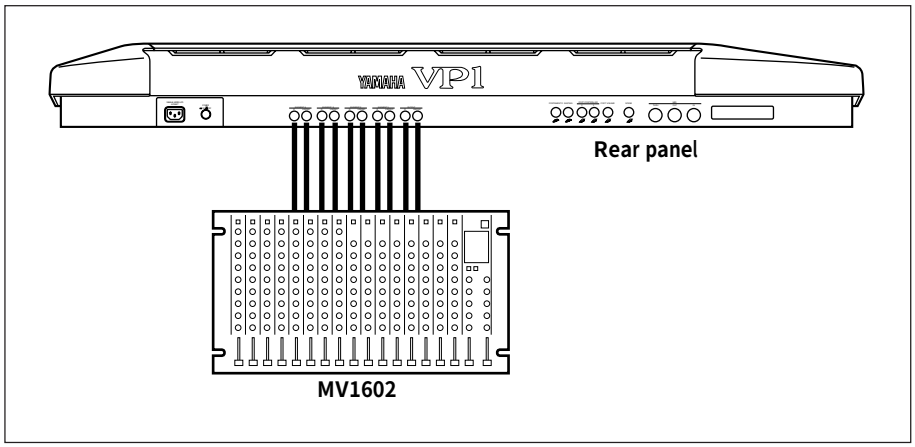
■ Mixer

Connect each OUTPUT jack to a channel on the mixer. The channel connected to the L/MONO jack becomes the left pan; the channel connected to the R jack becomes the right pan. Note that you can make the same kind of connection to an MTR (CMX series), cassette deck, or similar such audio device.



■ ELEMENT jacks

You can connect each of the ELEMENT jacks to a different mixer channel. (For monaural operation, connect the four L/MONO outputs only.) By also connecting the two OUTPUT jacks to the mixer, you can get up to ten channels of output at one time.



Important

- Never connect OUTPUT jacks to the microphone inputs of external amps or cassette decks. Connecting through the microphone input can degrade sound quality and may damage the external device. If you are connecting to a mixer, set the mixer channels for “line input.”
- Remember that the VOLUME slider, effects settings, and equalizer settings do not affect output coming from the VP1’s ELEMENT jacks.
- Quick Edit effects do not operate on output from the VP1’s ELEMENT jacks.

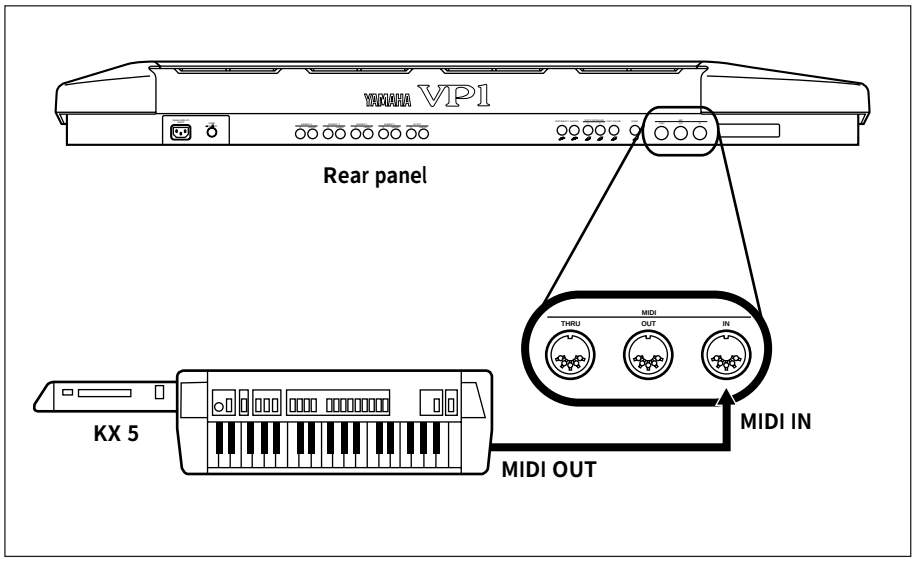
FYI

- The VP1 is normally used to produce stereo sound (two channels). For professional applications you can use the two channels from the OUTPUT jacks, in combination with the eight channels from the ELEMENT jacks.

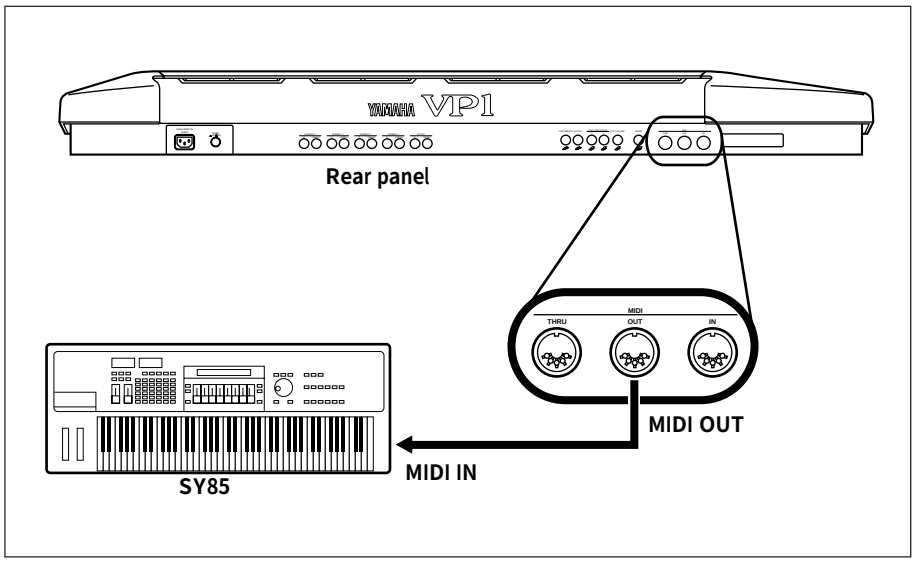
MIDI Connection

MIDI connection allows you to control the VP1 from an external sequencer, computer, or keyboard, or to control an external synthesizer or MIDI module from the VP1. The following figures show some typical MIDI configurations.

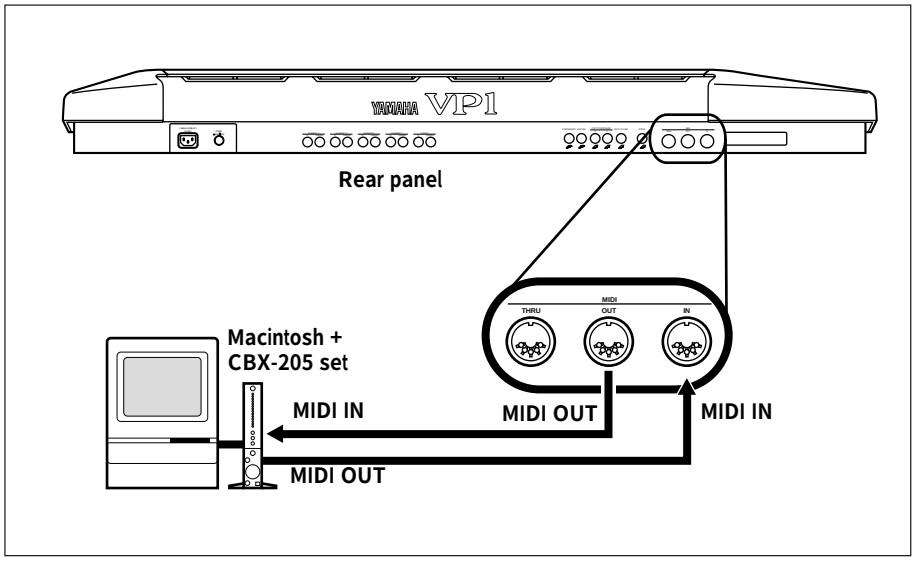
■ To control the VP1 from an external keyboard or MIDI controller:



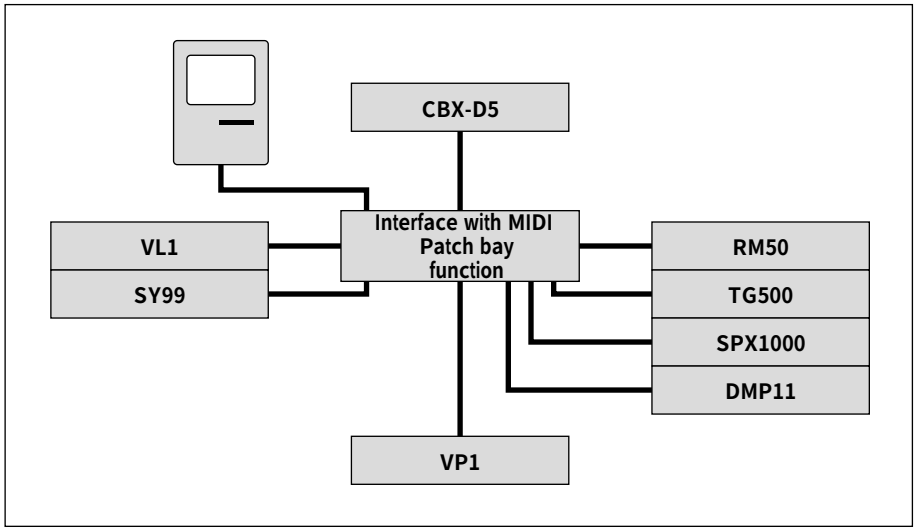
■ To control an external synthesizer or MIDI module from the VP1:



■ To record to, or play back from, a sequencer or computer:



■ Configuration of a “live” system



FYI

- Many other MIDI configurations are also possible.
- The MIDI THRU connector relays the signal received over the MIDI IN connector. Use of MIDI THRU connections makes it possible to link together three or more devices.

The Floppy Disk

The floppy disk included in the VP1 package contains a copy of the data stored in the VP1's internal memory at time of shipping. You can use this floppy disk to restore the original environment at any time. (→ REFERENCE: 3-4).

FYI

- The floppy disk supplied with the VP1 contains system settings together with data defining 64 voices.

- The VP1 supports MF2HD-type floppy disks only.
- A single disk can store one sound file only. Each sound file contains one set of system settings together with data for up to 64 voices.
- The VP1 formats disks into standard MS-DOS format (1.44M, 18 sectors/track). This makes it easy to move your data into a conventional MS-DOS-compatible computer for storage or processing.

MIDI

The VP1's MIDI capability significantly expands the range of performance opportunities available to you. This page presents a brief overview of the VP1 MIDI.

■ What is MIDI?

MIDI ("Musical Instrument Digital Interface") is the internationally recognized standard interface for music-related digital communication among electronic instruments, computers, sequencers, and related devices.

■ MIDI connectors and cables

All MIDI devices include MIDI connectors marked IN (input), OUT (output), and THRU. (The THRU connector relays the data received at the IN connector.) MIDI connections are made by running standard MIDI cables between these connectors. Each MIDI cable connects the OUT or THRU connector of one device to the IN connector of another device.

■ Channels

A single MIDI cable can carry up to 16 channels of performance data — with each channel originating from a different device. If you have a MIDI setup consisting of three keyboards outputting performance data to a fourth device, for example, each keyboard would be transmitting data over its own channel. Each channel is identified by its channel number (1 to 16).

■ Data types

Each channel carries a variety of data types. Data types include the following.

Channel Messages

- Note data: Struck notes (pitches), and striking force
- Control change: Controller movement (modulation wheel, foot controller, breath controller, etc.)
- Program change: New voice selection
- Channel aftertouch: Pressure retained on key after initial strike
- Pitch-bend: Movement of the pitch wheel

System Messages

- System-exclusive messages: Remote switch operation only (receive only)

Chapter 2

Trying It Out

This chapter guides you through a trial run with the VP1, and explains how to play the built-in demo selections.

First Try

Now that you have connected up the VP1 as described in Chapter 1, you are ready to try it out.

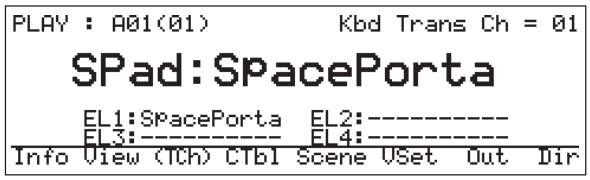
Checking the Sound Output

First, let's check that the VP1 correctly generates sound.

Procedure

1. Press the POWER switch on the rear panel.

▼The power comes on. The LCD briefly displays a greeting, then switches to the screen illustrated below.



2. Switch on the power to the amplifiers.

▼The power-indicator LEDs on the amplifiers come on.

3. Adjust the amplifier volume.

4. Raise the VOLUME slider on the VP1.

5. Check that the LED above the [PLAY] button is on.

If the LED is off, press the [PLAY] button once: the LED should come on.

6. Play some notes on the keyboard.

▼You should hear the sound of the notes.

If you do not hear anything, refer back to Chapter 1 and recheck the connections. If the connections appear to be correct, refer to the Troubleshooting section. (→ REFERENCE: App-5)

FYI

- For some voices, the initial display includes a "Notes" window containing a comment about the voice. You can close the window by pressing the [EXIT] button.

Trying Some Voices

The VP1's internal memory comes loaded with 64 voices: four banks (A to D) of 16 voices each. The next procedure illustrates the various methods for switching to different voices. Try playing a few of the voices to see how they sound. When you select a voice, the voice's category and name appear in large letters at the center of the display.

Procedure

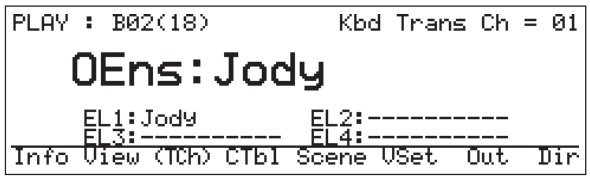
1. Press bank button [B].

▼The LED above the button begins flashing.

2. Press program button [2].

▼The Quick Edit panel lights up briefly. The LCD then changes to the display illustrated below — indicating that the selected voice is B02, "Jody."

Now try selecting other voices by pressing the appropriate bank button ([A] to [D]) followed by the appropriate program button. If you are switching between voices in the same bank, you do not need to press the bank button.



3. Press the [INC/YES] button.

▼The voice number increases by 1.

In the same way, pressing the [DEC/NO] decreases the voice number by 1. Notice that the [INC/YES] and [DEC/NO] buttons are not restricted by bank boundaries — pressing [INC/YES] when the current voice is A16, for example, switches the voice to B1. The [INC/YES] and [DEC/NO] buttons for switching between nearby voices.

4. Turn the dial.

Turn the dial clockwise to continuously increment the voice number, or counterclockwise to decrement the number.

Now spend some time practicing the different voice-selection methods and familiarizing yourself with the sounds of some of the voices.

FYI

- Some voices display a comment window when you first switch into them. You can close the window by pressing the [EXIT] button, and reopen it by pressing the [ENTER] button. (→ REFERENCE: 1-4)
- The bottom line of the LCD displays a menu of the functions accessible from the current screen (→ REFERENCE: 1-3, 1-9)

Using the Controllers

Now let's try using the parameter controllers and scene controller to alter the sound of "The sound of the Waterbell voice (voice A02)".

Important

- The procedure below assumes that factory-default values are in effect for the Tone Generator (→ REFERENCE: 2-4) and Assignable Controller (→ REFERENCE: 2-10) settings. If these values have been changed, the controllers may not operate as described.

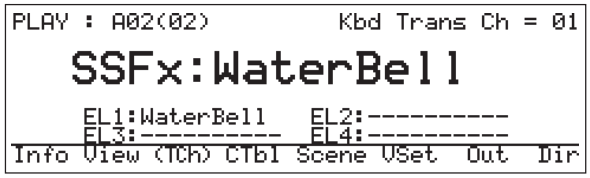
Procedure

1. Press bank button [A].

▼The LED above the button begins flashing.

2. Press program button [2].

▼The LCD changes to the display illustrated below, indicating that the selected voice is A02, "WaterBell."



3. Play on the keyboard.

Familiarize yourself with the sound of the voice.

4. Press [SCENE2].

▼The [SCENE1] LED goes off, and the [SCENE2] LED comes on.

5. Play on the keyboard again.

The voice now has a noticeably different sound.

6. Press [SCENE3].

▼The [SCENE2] LED goes off, and the [SCENE3] LED comes on.

7. Play on the keyboard once again.

The sound of the voice has changed again.

You can record up to three scenes for each voice, and instantaneously switch among them. Each scene consists of a prerecorded combination of controller settings. For further information about scenes, refer to the next chapter. (→ BASICS: 3-11)

8. Move the SCENE CONTROLLER all the way to the right.

9. Play on the keyboard while slowly sliding the SCENE CONTROLLER all the way to the left.
The sound of the voice changes continuously as you slide the scene controller. The scene controller allows you to make smooth changes between scenes.

10. Press [SCENE2].
▼The [SCENE2] LED comes on.

11. Play on the keyboard with your right hand while rotating the MODULATION 2 wheel with your left hand.
The indicator LED starts out red, but then turns green when rotation passes a certain point — indicating that the modulation wheel has become effective. (This type of operation is referred to as the controller's "hook" function. For details, refer to the next chapter.)

On the WaterBell voice, the Modulation 2 wheel controls the "Mellowness" parameter. Operate the wheel and listen to the effect of this parameter.

12. Next, try out the effects of the other controllers: the pitch wheel, modulation-1 wheel, modulation ball, continuous sliders, foot controllers, and foot switch.
By combining these controller effects, you can obtain a remarkable range of variation for the voice.

Each voice allocates parameters to controllers in its own way; each time you change to a different voice, some or all of the parameter assignments also change. The factory-default parameter assignments for the WaterBell voice are as follows.

Modulation-1 wheel:	Stiffness
Modulation-2 wheel:	Mellowness
Foot controller 1:	Mod. speed (Fluid speed)
Foot controller 2:	Resonance (Emergence)
Modulation ball (X direction):	Material 1 (Resonance)
Modulation ball (Y direction):	Material 2 (Thickness)
Velocity:	Volume (Stress)
Aftertouch:	Pitch down

Combining the effects of different controllers can cause the voice to change so much that you lose track of its original sound. But you can always return to an original sound by pressing one of the SCENE buttons.

Try out the effects of the parameter controllers and scene controller on different voices. You will notice that the controls tend to function differently for each voice. For a listing of the default controller assignments for each voice, refer to the separately issued "Performance Note."

Using Quick Edit

The VP1's Quick Edit capability allows you to perform simple voice editing during performance. The procedure below introduces you to Quick Edit operation. Refer to the next chapter for a detailed explanation about quick editing. (→ BASICS: 3-16)

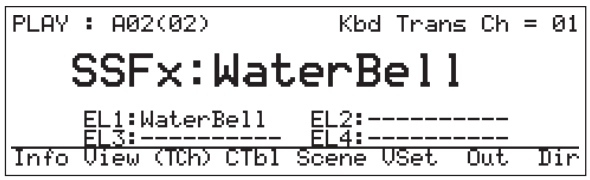
Procedure

1. Press bank button [A].

▼The LED above the button begins flashing.

2. Press program button [2].

▼The LCD changes to the display illustrated below, indicating that the selected voice is A02, "WaterBell".



3. Check that the top line of the Quick Edit panel (EQ LOW, EQ LO-MID, EQ HI-MID, and EQ HIGH) is highlighted.

If a different line is highlighted, press the Quick Edit panel's △ button to move the highlight to the top.

4. Play on the keyboard with your right hand while moving the second quick-edit slider (QS2) up and down.

The slider does not become effective until it moves past the midpoint on the scale. For details about how a controller becomes effective, refer to the discussion of the Controller Hook function in the next chapter. (→ BASICS: 3-14)

The highlighted EQ LO-MID above the slider tells you that the current function of the slider is to control the gain for the low-middle range.

5. Press the ▽ button on the Quick Edit panel.

▼The highlight moves to the second line of the Quick Edit panel (AT FOLLOW, VEL SENS, POR TIME, and EF DEPTH).

6. Play on the keyboard with your right hand while moving QS4 up and down.

Once again, the slider does not become effective until it moves past the midpoint on the scale. Because EF DEPTH is highlighted, you know that the slider's current function is to control the effect depth.

It is important to note that Quick Editing changes the voice's characteristics — in effect, it creates a new voice. If you like the new sound, you can store it as a separate voice. (→ BASICS: 3-28) If you do not like the editing results, you can cancel them by pressing the original voice's program number (in the example above, number 2), or by switching to a different voice.

Important

- Using a Quick Edit slider to increase the EQ gain may in some cases overload the volume, resulting in output distortion. One way to correct this problem is to lower the volume settings of the affected elements.

FYI

- When you first move a quick edit slider or press the Quick Edit panel's △ or ▽ selector, an E mark appears directly in front of the voice number displayed on the top line of the LCD. This E mark indicates that the voice has been edited. To cancel the results of editing and remove the mark, reselect the same voice (by pressing the currently illuminated program number).

Playing the Demos

The next procedure shows you how to play the VP1's built-in demo selections.

Important

- Demos that use four-element voices tend to play out at high volume. Keep volume settings low to avoid the risk of ear damage.

FYI

- Demo playback does not affect currently stored voice and system data.

Procedure

1. While holding down the [PLAY] button, press the [SYSTEM] button.

▼The following screen appears:

2. Press [F7] :[RUN].

▼The demo starts playing.

You can stop the playback at any time by pressing [F8] :[STOP].

Once the playback has stopped, you can select a different demo number by rotating the dial or pressing the [INC/YES] or [DEC/NO] button.

To return to PLAY mode, press [PLAY] or [EXIT] .

Chapter 3

Learning the Basics

This chapter describes the principles of VP1 sound production, and explains the basics of controllers, scenes, quick editing, and other features.

Sound Production

F/VA Sound Synthesis

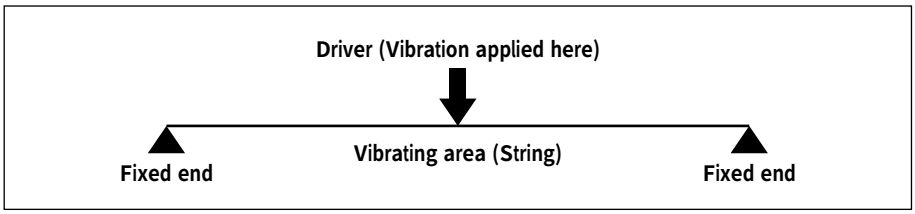
As you know, the VP1 uses VA (virtual acoustic) synthesis to produce sound. To be more precise, Yamaha has developed two different VA methods, each designed to model a particular range of instruments. The VP1 employs the F/VA (free-oscillating VA) method, which provides truer modeling of instruments that are played by striking or plucking of strings. In contrast, Yamaha's VL1 synthesizer adopts an S/VA (self-oscillating VA) approach more suited to modeling of wind and bowed-string instruments.

FYI

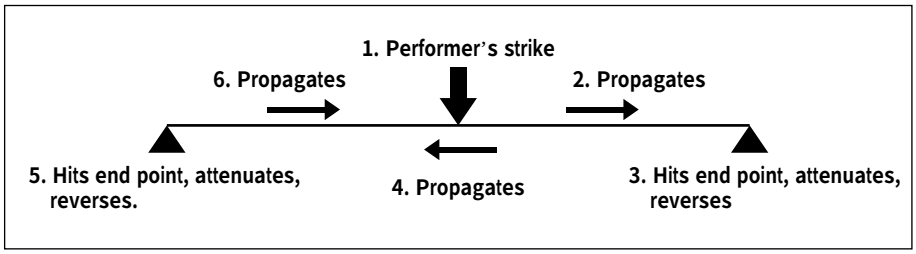
- F/VA and S/VA systems are fundamentally different and incompatible. Data and parameters cannot be moved from one system to another.

Physical Characteristics of Struck-String Instruments

The following drawing illustrates the sound system on a struck- string instrument such as a guitar.



The next illustration shows how the impact to the string propagates over time.



The F/VA approach generates models based on the vibrational system described above.

Now let's look more closely at the "driver" and "string" components mentioned above.

Driver

The “driver” is the component that applies vibrational force to the string. It is analogous, for example, to a pick that strikes a guitar string.

To produce sound, the VP1 calculates the amount of force applied by the action of the “pick”, then applies this force to the “string”. The calculation takes into account a variety of factors, including the hardness of the pick material and the force of the striking action.

The VP1’s ability to calculate accurate driving forces is one of the important reasons for its realistic sound. But the VA system also allows you to design nonrealistic driving forces, so that you can also produce highly synthetic sounds unavailable outside the realm of electronic music.

String

The “string” component simulates the action of the string in response to the force from the driver. This string action produces sound. The pitch and quality of the sound depend on the string’s various properties — most significantly, its length, width, and stiffness.

The VP1 allows you to freely vary the ratio at which the vibrational impulse reflects off the fixed ends of the string. In a real acoustic instrument this reflection ratio is always less than 100%. By setting the level above 100% you can reproduce the type of feedback effect that typically occurs when a microphone is brought up close to the speaker to which it is connected.

FYI

- F/VA and S/VA designs are fundamentally different. Although S/VA synthesizers such as the VL1 also use “driver” and “string” parameters, these should not be confused with the driver and string components of the VP1.

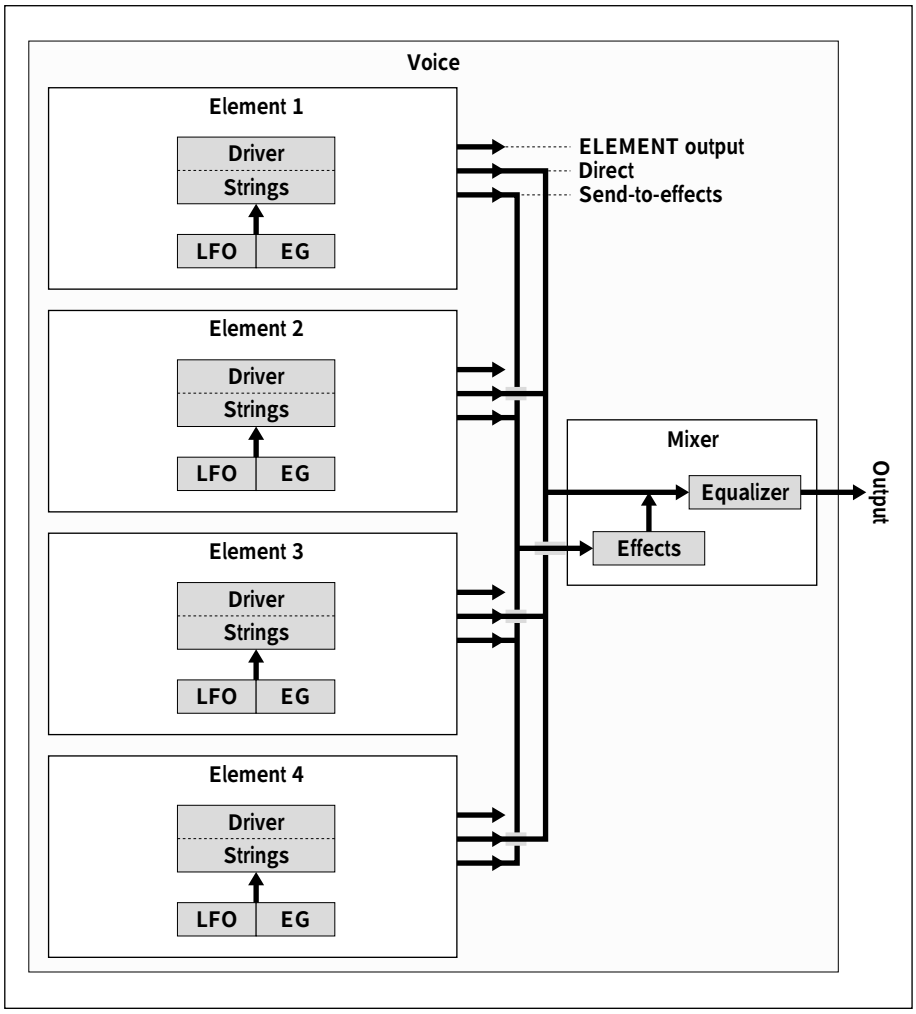
Editing Limitations

Although driver and string components incorporate hundreds of parameters, not all of these are accessible to editing. Each voice offers its own subset of available parameters. At the same time, controllers give you full functional control over the most important parameters for each voice.

The limited number of accessible parameters does not significantly detract from your freedom to obtain a full range of sounds. The voices supplied on the VP1’s floppy disk have been carefully selected for variety, attractiveness, and practicality. In addition, care has been taken to ensure that you have direct access to the most significant parameters for each of these voices.

Voice Formation

The following drawing illustrates the process used to generate a single voice.



Elements

A voice consists of up to four elements. Each element consists of a driver component, a string component, an LFO (low frequency oscillator), and an EG (envelope generator).

These different components comprise hundreds of parameters. Among these, you have direct access to the Quick Edit parameters and up to thirteen other parameters assigned to the various controllers. The set of controllable parameters is different for each voice.

The VP1 transmits data about keyboard and controller action to each element. The elements respond by producing and outputting the appropriate sound.

Each element has three outputs: an ELEMENT output, a Direct output (no effects), and a Send-to-effects output.

Mixer

The mixer adjusts the balance of the Direct and Send-to-effects outputs from the four elements, controls equalization, and mixes in the effects. All mixer-related parameters are accessible for editing.

■ Effects

The VP1 offers a choice of more than thirty effects, including reverb, chorus, flanger, and pitch change. You can make fine adjustments to all of the parameters governing these effects.

■ Equalizer

This is a four-band parametric equalizer. The Low and High bands utilize shelving-type dynamic equalization.

Voices

The VP1's internal memory stores up to 64 voices, organized into four banks with 16 voices (01 to 16) each.

Bank A: 01 to 16
Bank B: 01 to 16
Bank C: 01 to 16
Bank D: 01 to 16

Each voice is uniquely identified by its "voice number" — its bank letter followed by its number within the bank. "A01", for example, denotes voice 01 of Bank A. "C12" is voice 12 of Bank C.

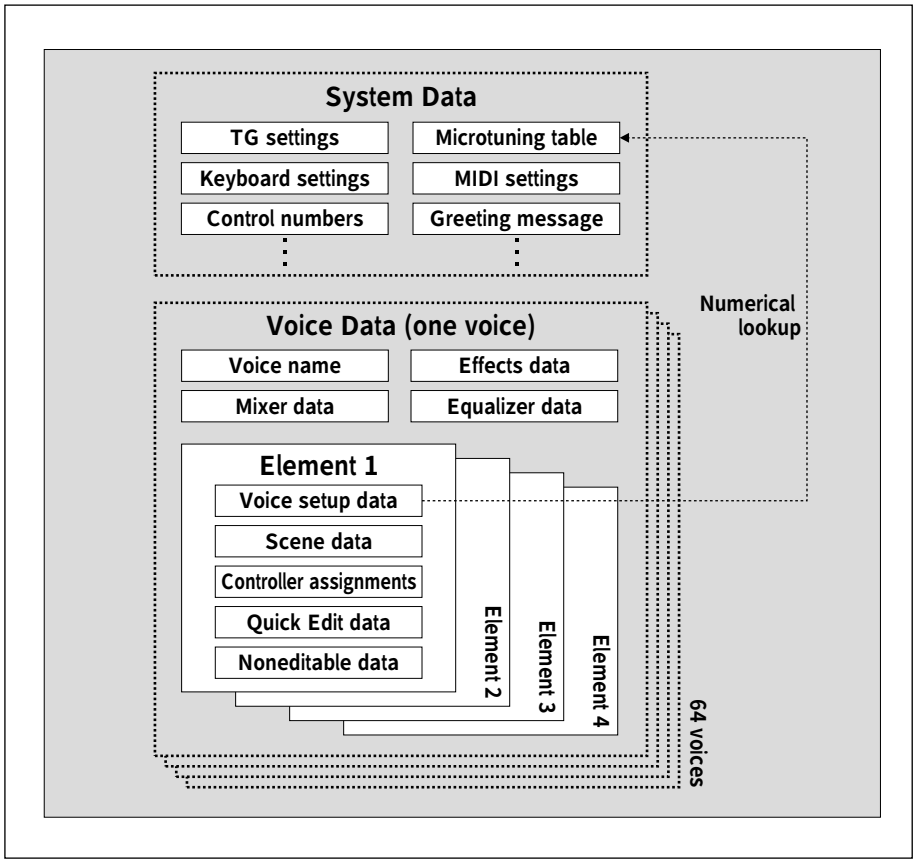
Each voice is also associated with a voice name (up to ten characters), a category (→ BASICS: 3-21), and an optional comment (→ REFERENCE: 1-54)

FYI

- Within MIDI communications, voices A01 to D16 are identified by "program change numbers" 00 to 63, respectively. If the VP1 receives a program change number of 17 from an external sequencer, for example, it responds by selecting voice B02.
- The VP1 ignores program change numbers between 64 and 127.
- The VP1 does not support bank-select signals.

Memory Configuration

The VP1's internal memory is configured as shown.



System Data

The System Data area stores the settings made in SYSTEM mode. These settings are effective for all voices.

The microtuning table contains information used during voice setup. Each voice's "voice setup data" includes keys pointing to the relevant table entries.

Voice Data

The Voice Data area stores data defining each of the voice elements. It also stores general voice information, such as voice's name and its effects settings.

Floppy Disks

You can save all of the VP1's internal data to floppy disk for safekeeping. Once you have saved the data, you can reload all or some of the voices at any time.

■ Saving to disk

The VP1 does not allow you to save selected voices only. In order to save, you must use the following operation:

- Save All Data

This operation writes all voice and system data to disk — all 64 voices, together with the current system data. The VP1 writes this data into a one large file on the disk. A single (2HD) disk has room enough to store only one such file.

■ Loading from disk

The VP1 supports three different loading methods.

- Load All Data

Copies all system and voice data from the floppy disk.

- Load Bank

Copies the selected bank (16 voices) of voice data from the disk into the VP1.

- Load Voice

Copies voice data for the selected voice only.

Important

- The only way to load system data from the disk is to execute a Load All Data. This means that you cannot load system data unless you also load all 64 voices as well.

FYI

- The size of the saved file (one set of system data and 64 sets of voice data) is approximately 1300K. In other words, each file occupies an entire disk.
- The maximum length for the filename is eight letters. The ".VP1" extension is automatically appended to the filename.

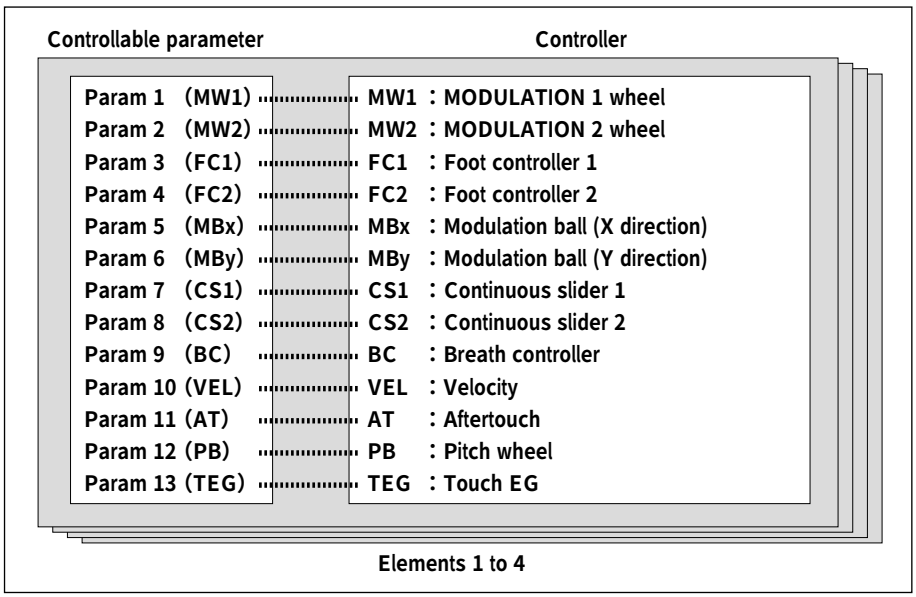
Controllers

The VP1 provides numerous controllers — including two modulation wheels, a modulation ball, a pitch wheel, and two foot controllers.

Principle of Operation

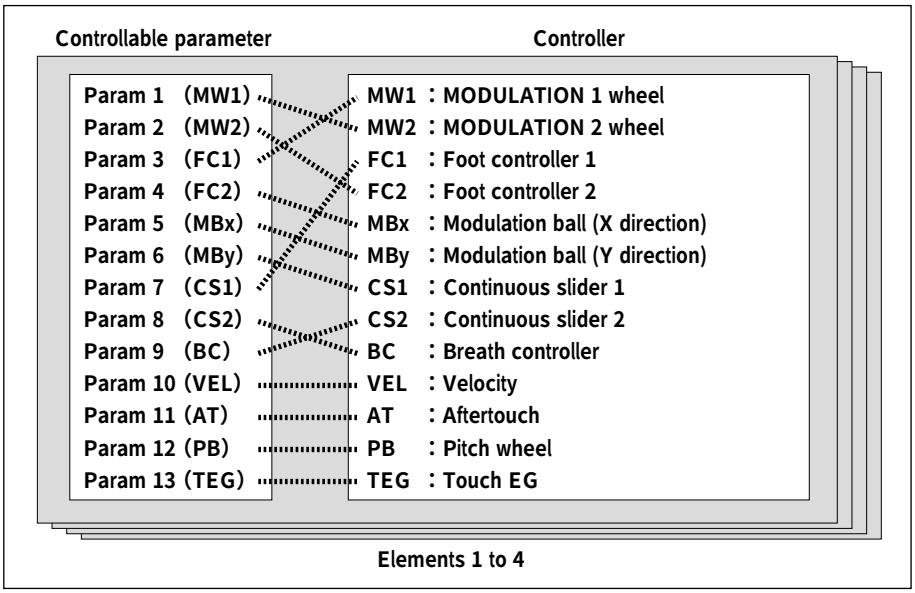
As described above, you can use controllers to dynamically control up to thirteen of each element's parameters during performance. Each element actually involves hundreds of parameters; the set of parameters available for control is different for each voice.

Each controller controls a single parameter (with the exception of the modulation ball, which controls two parameters). In the factory-set environment, the VP1 assigns parameters to controllers as follows.



To enhance flexibility, the VP1 allows you the freedom to rearrange some of the controller assignments, as suggested by the illustration on the next page. (→ REFERENCE: 1-10)

Each controller has a corresponding controller LED that indicates its status. The LED is ON (green, solid red, or flashing red) if the controller is currently assigned, and OFF if it is not assigned. For information about the difference between green and red indications, refer to the section on "Scenes", below. (→ BASICS: 3-11)

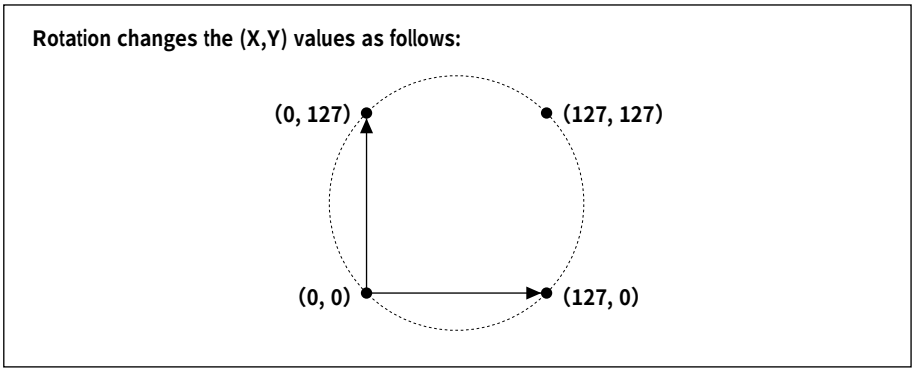


Innovative Controller Types

Here we describe a few of the more distinctive controllers found on the VP1.

■ Modulation Ball

The modulation ball controls two parameters simultaneously — rotation in the X direction controls one parameter, while rotation in the Y direction controls the other. To set the ball in home position (both parameters set to 0), rotate it all the way to the left and down.



You are free to change the control numbers associated with the modulation ball. (→ REFERENCE: 2-10)

■ Continuous sliders

You are free to change the controller numbers used to identify these sliders. (→ REFERENCE: 2-10)

■ Touch EG

The Touch-EG controller governs crossfading of velocity and channel aftertouch (MIDI channel pressure).

As an example, assume that touch-EG has been set to control vibrato. In this case, a hard strike on the keyboard causes vibrato to start immediately. If you continue to hold the key down lightly the vibrato gradually fades, but if you hold it down with force, the vibrato continues.

In contrast, striking the key lightly produces no initial vibrato. If you continue to hold the key down lightly the sound continues with no vibrato. But you can add vibrato to the sound at any time by increasing your pressure on the key.

FYI

- The following table shows the controllers supported by the VP1.

Controller	Possible controller numbers	Default controller number
MW1	Fixed	1
MW2	1 ~ 31, 33 ~ 119	13
FC1	Fixed	4
FC2	1 ~ 31, 33 ~ 119	12
MBx	1 ~ 31, 33 ~ 119	16
MBy	1 ~ 31, 33 ~ 119	17
BC	Fixed	2
CS1	1 ~ 31, 33 ~ 119	18
CS2	1 ~ 31, 33 ~ 119	19
QS1	1 ~ 31, 33 ~ 119	80
QS2	1 ~ 31, 33 ~ 119	81
QS3	1 ~ 31, 33 ~ 119	82
QS4	1 ~ 31, 33 ~ 119	83
SCENE CONTROLLER	1 ~ 31, 33 ~ 119	14
Foot volume	Fixed	7
Sustain switch	Fixed	64
Portamento switch	Fixed	65
Velocity	Fixed	–
Aftertouch	Fixed	–
Pitch wheel	Fixed	–
Touch EG	Fixed	–

- For details about how you can change controller numbers, refer to the description of the SYSTEM mode's Assignable Controller function. (→ REFERENCE: 2-10)

Scenes

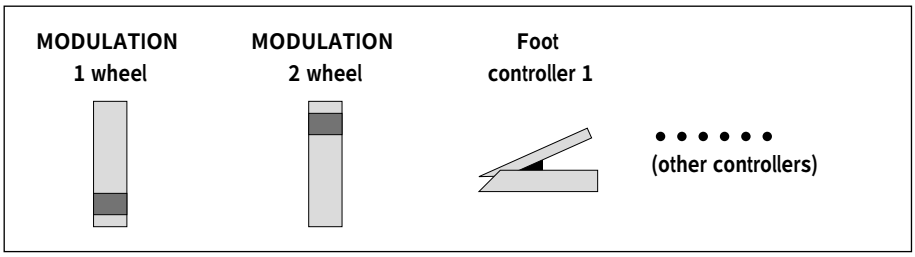
The VP1's innovative "scene" capabilities enable you to obtain a high level of dynamic control over sound and sound changes during your performance.

What is a Scene?

A scene is a memorized set of controller positions. Once you have stored a scene to memory, you can recall it at any time by pressing the corresponding SCENE button. Or you can use the SCENE CONTROLLER to fade seamlessly between adjacent scenes.

Each scene consists of memorized positions for most of the controllers listed on the previous page. The controllers excluded from the scene are: velocity, pitch wheel, touch EG, foot volume, and sustain and portamento switches.

By way of explanation, assume that you like the sound you get when controllers are set as shown below.



You can save these controller settings by calling the Scene function and storing them as a scene. (→ REFERENCE: 1-14) The VP1 allows you to store up to three scenes. In this case, let's assume that you store this configuration as Scene 3.

Now that you have stored the scene, you can proceed to operate the controllers any way you like, then instantly call the scene back at any time by pressing [SCENE3]. But notice that while pressing the button immediately restores the memorized controller settings, it does not change the current physical position of the controllers. In other words, a discrepancy arises between the physical and internal controller settings. To learn how this is resolved, refer to the section on the Controller Hook function, below. (→ BASICS: 3-14)

Once you have stored three different sets of controller settings, you can call them back at any time by pressing the [SCENE1], [SCENE2], and [SCENE3] buttons.

FYI

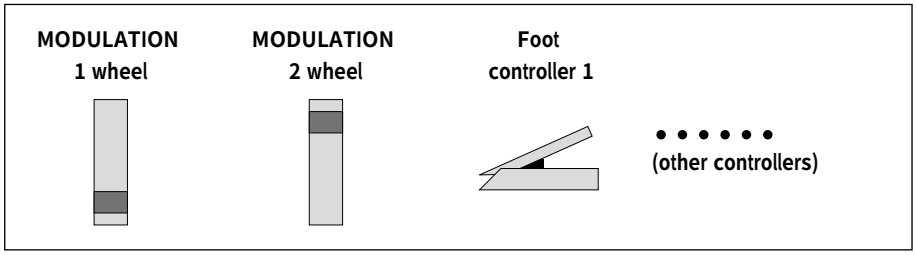
- Although the scene does not record the pitch wheel's pitch setting, it does record the value of any other parameter that may be assigned to the pitch wheel. It also records the aftertouch component of the touch-EG data.

Scene Controller

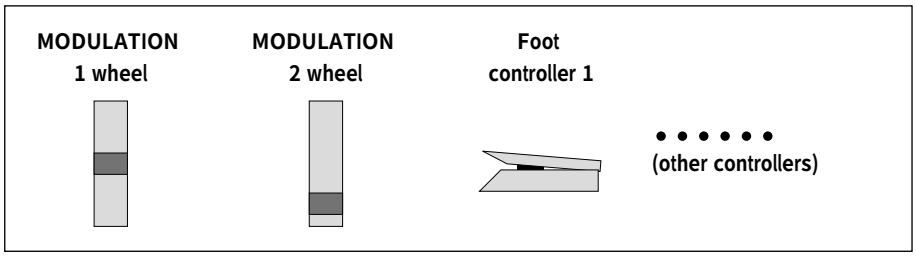
Use the scene controller to fade from one scene into another. The controller's central position (click-stop) corresponds to Scene 2.

For example, assume that the VP1 has stored the following three scenes.

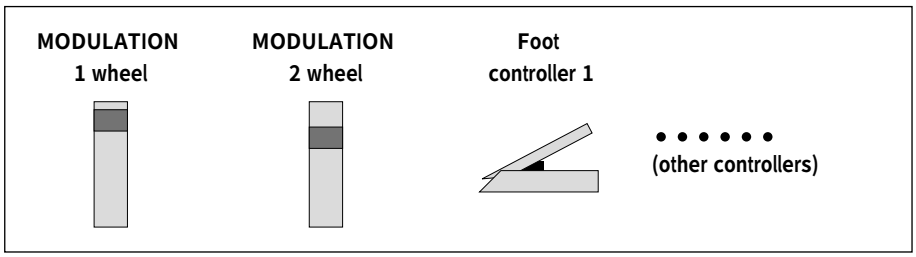
Scene 1



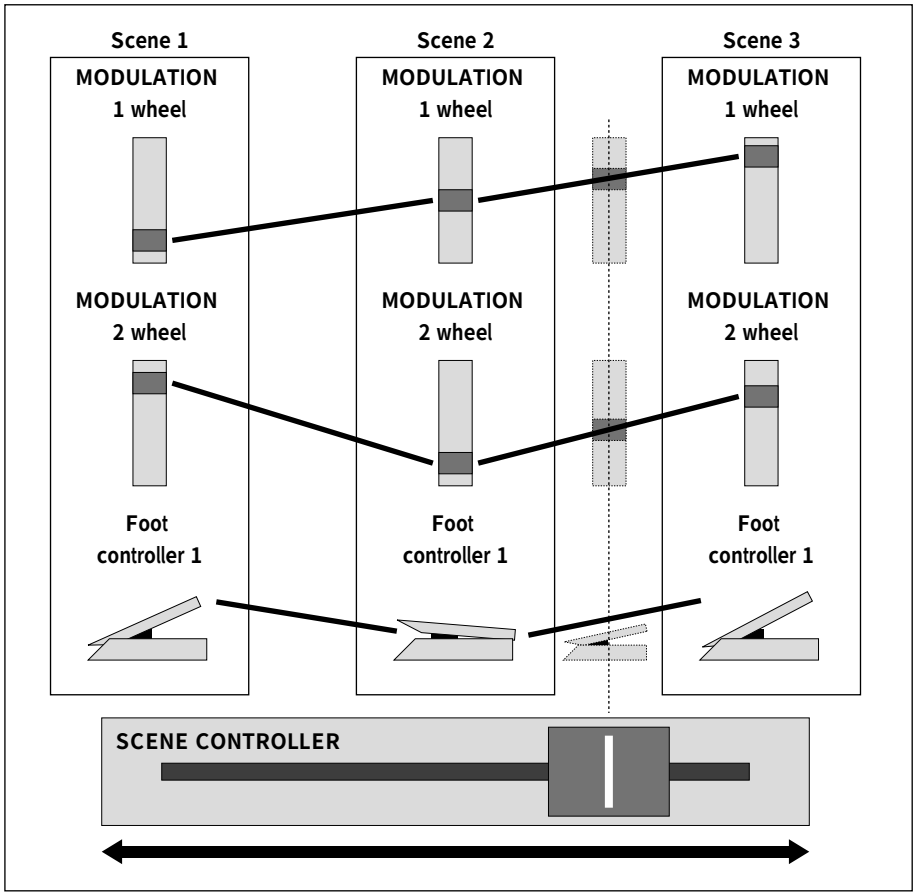
Scene 2



Scene 3



In this situation, the SCENE CONTROLLER continuously changes the various controller settings as illustrated in the figure on the next page. When the SCENE CONTROLLER knob is in the position shown, the effective controller settings will be as shown directly above it (along the dotted line).



You can use a foot controller to obtain the same control you get with the SCENE CONTROLLER knob. Simply connect the foot controller into the SCENE jack on the VP1's rear panel. The foot controller's highest position corresponds to Scene 1; the fully depressed position corresponds to Scene 3.

Note also that you can use the SYSTEM mode's "Aftertouch Scene" switch to select whether or not the scene controller operates on aftertouch data. (→ REFERENCE: 2-4)

Scene LEDs

The LED above each SCENE button indicates how "close" you are to that scene. You can see how this works by watching the LEDs as you move the SCENE CONTROLLER up and back.

Red:	At the scene
Yellow:	Close to the scene
Green:	Moving away from the scene
Off:	Far from the scene

Controller Hook Function

When you press a SCENE button or move the SCENE CONTROLLER, you effectively change most or all of the controller settings. But the controllers themselves do not move. This means that a discrepancy arises between the internal controller settings and the actual controller positions.

You use the Controller Hook function to determine the point at which physical controllers become effective when such a discrepancy exists. (→ REFERENCE: 2-4)

■ Controller Hook = OFF

If Controller Hook is OFF, physical controllers become effective as soon as they are moved. In other words, moving a controller just a slight amount causes an immediate jump from the internal controller setting to the physical controller setting. This can cause a sudden (and in some cases jarring) change in sound. Note also that vibration from the keyboard or speaker may sometimes cause a controller to move on its own; if Controller Hook is OFF, this slight unintentional movement can cause a dramatic change in sound.

■ Controller Hook = ON

If Controller Hook is ON, the physical controller does not becomes effective until it matches the “position” of the internal controller. This eliminates the drastic sound changes that can occur when Controller Hook is set OFF. For most applications you will probably want to leave the setting ON.

FYI

- The Controller Hook setting also affects Quick Edit operation. (→ BASICS: 3-17)
- If you are using both a FOOT CONTROLLER and the SCENE CONTROLLER (slider) for scene control, the one that was moved last is the one that is effective.

Controller LEDs

Each controller has a corresponding LED that indicates its status. Some controller LEDs are located directly above their controllers (PITCH, MODULATION 1, and MODULATION 2 wheels), while others are lined up vertically just to the left of the keyboard. Each LED can be in any of four states: solid RED, flashing RED, GREEN, or OFF.

■ Solid RED

Solid RED means that the controller is assigned to a parameter but is not yet within the effective range. This condition arises when the Controller Hook function is ON and the controller's actual position has not yet moved past the internal controller setting established by a SCENE button or the SCENE CONTROLLER. Thus, a discrepancy exists between the physical controller position and the internal controller setting.

■ Flashing RED

Flashing RED means that the controller is effective for at least one element, but has still not reached effective position for at least one other element. This condition occurs when the Controller Hook function is ON and you have moved the controller past the internal controller setting(s) for one or more of the voice's elements, but has not yet moved it past the setting for at least one other of the voice's elements. (Remember that a single voice consists of up to four elements, and the controller operates independently for each element.)

■ GREEN

A GREEN indication means that the controller is currently effective for all elements of the voice. If Controller Hook is OFF, all assigned controllers will be indicated by GREEN LEDs. (In some cases a LED may be red when you first call a scene, but immediately switches to GREEN as soon as you move the controller.) If Control Hook is ON, the LED becomes GREEN at the moment when the controller becomes effective for all of the voice's elements.

■ OFF

The controller is not assigned to any parameter.

Controller Initialization Function

The Controller Init setting determines whether existing controller settings are retained when you switch to a new voice. (→ REFERENCE: 2-4)

■ Controller Init = OFF

The existing controller positions remain in effect when you switch to a new voice. If there is any difference between physical and internal controller settings, the VP1 immediately changes the internal settings so that they match the physical settings.

■ Controller Init = ON

Switching to a new voice automatically switches the controller environment to the "initial" scene. You can set up any of the scenes (Scenes 1 to 3) as the initial scene; for information, refer to the REFERENCE section. (→ REFERENCE: 1-14)

Quick Edit

The Quick Edit function allows you to perform simple real-time voice editing.

General Description

You use the Quick Edit panel to perform real-time editing of voice elements. Use the Quick Edit selectors (△ and ▽) and the four sliders to select and adjust the desired parameters. During performance, you can essentially use these sliders as additional controllers.

The Quick Edit panel gives you access to 16 preselected parameters, each with a relatively large impact on the final sound. Note that these parameter allocations are permanent and cannot be changed.

1 : EQ LOW	Low band equalization
2 : EQ LO-MID	Low-mid band equalization
3 : EQ HI-MID	High-mid band equalization
4 : EQ HIGH	High band equalization
5 : AT FOLLOW	Aftertouch following
6 : VEL SENS	Velocity sensitivity
7 : POR TIME	Portamento time
8 : EF DEPTH	Effect depth
9 : LFO DEPTH	LFO oscillation amplitude
10 : LFO SPEED	LFO oscillation speed
11 : LFO DELAY	LFO time lag
12 : LFO HOLD	LFO-effect hold time
13 : EG ATTACK	Envelope generator's attack rate
14 : EG DECAY	Envelope generator's decay rate
15 : EG SUSTN	Envelope generator's sustain level
16 : EG RELSE	Envelope generator's release rate

The parameter names are arranged in a four-by-four grid, as shown.

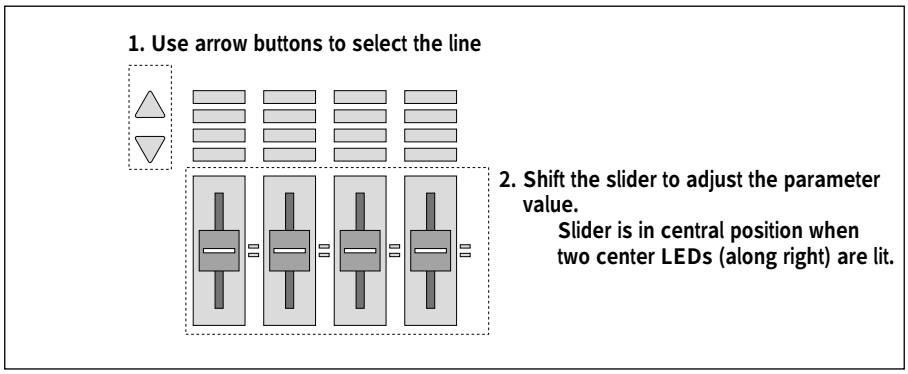
EQ LOW	**EQ LO-MID**	**EQ HI -MID**	**EQ HIGH**
AT FOLLOW	**VEL SENS**	**POR TIME**	**EF DEPTH**
LFO DEPTH	**LFO SPEED**	**LFO DELAY**	**LFO HOLD**
EG ATTACK	**EG DECAY**	**EG SUSTN**	**EG RELSE**

FYI

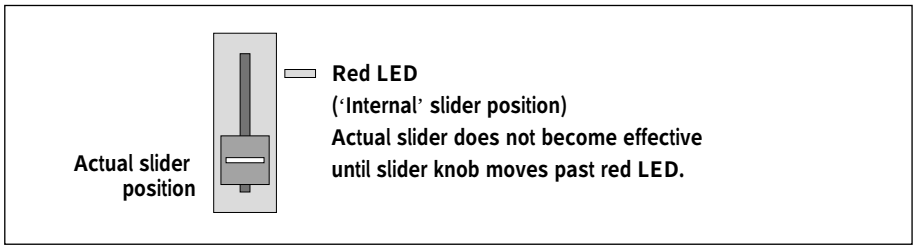
- A quick edit slider is usable only if at least one of the LEDs along the right of the slider is switched on. LEDs will come on only if VP1 channels and MIDI channel settings are in agreement. (→ REFERENCE: 2-8)

Using Quick Edit

The VP1's Quick Edit function is extremely easy to use. First press one of the selectors (△ and ▽) as necessary to highlight the line containing the name of the parameter you need to edit. Next, adjust the parameter value by operating the slider located directly under the parameter name. (When you first move the slider, an E mark appears in front of the voice number on the top line of the LCD, indicating that the voice is being edited.)



The Controller Hook function described earlier (→ BASICS: 3-14) also works for the Quick Edit sliders. If Controller Hook is set ON, one of the LEDs at the right of the slider lights up in red to indicate the position of the "internal" slider. The physical slider does not become effective until it moves past this red LED.



FYI

- The voice's parameter settings determine which line on the Quick Edit panel lights up first. Pressing the selector arrow will immediately start up an editing session, causing the E mark to appear on the LCD.

Storing Results

If you like the results you have achieved with quick editing, you can store the edited voice to memory. (→ BASICS: 3-28) If you do not like the results, you can return to the original voice at any time by pressing the illuminated program button. This will return you to the voice as it existed just before you began quick editing.

Quick-Edit Parameters

The next two pages present brief descriptions of the 16 Quick Edit parameters.

■ EQ LOW

Sets the gain for the low band. (→ REFERENCE: 1-51) Raise the slider to increase the gain value.

■ EQ LO-MID

Sets the gain for the low-mid band. (→ REFERENCE: 1-51)

■ EQ HI-MID

Sets the gain for the hi-mid band. (→ REFERENCE: 1-51)

■ EQ HIGH

Sets the gain for the high band. (→ REFERENCE: 1-51)

■ AT FOLLOW

Sets the speed at which the sound changes in response to changes in aftertouch. Lift the slider to make the response faster.

■ VEL SENS

Sets the velocity sensitivity — the amount by which velocity can change. Bringing the slider all the way forward fixes the velocity at "96"; velocity cannot change, so there are no velocity-related sound changes. If the slider is at the center position, the VP1 uses the voice's (element's) preset velocity sensitivity. Raising the slider above the midpoint further increases the degree of velocity change, resulting in greater velocity-induced sound change.

■ POR TIME

Adjusts the voice's (element's) portamento time setting. Raise the slider to extend the time.

■ EF DEPTH

Adjusts the return-from-effects level. (→ REFERENCE: 1-41) Pushing the slider upward raises the return level, increasing the impact of the effects.

■ LFO DEPTH

Adjusts the voice's (element's) LFO amplitude setting. Raise the slider to increase the oscillation amplitude.

■ LFO SPEED

Adjusts the voice's (element's) LFO speed setting. Raise the slider to increase the oscillation speed.

■ LFO DELAY

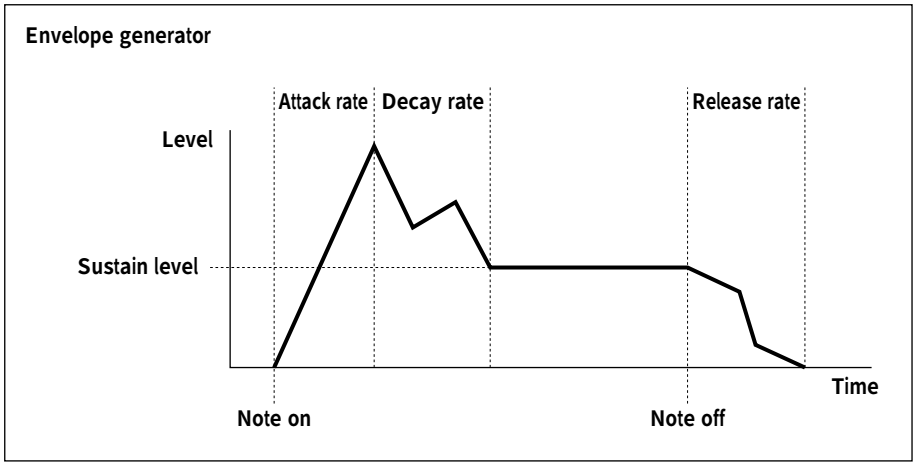
Adjusts the voice's (element's) LFO delay — the gap between the time you strike the key and the time the LFO effect begins. Raise the slider to increase the delay.

■ LFO HOLD

Adjusts the voice's (element's) LFO hold time — the length of time that the LFO effect lasts. Raise the slider to increase the hold time.

■ EG ATTACK

Adjusts the attack rate of the voice's (element's) envelope generator. Raise the slider to slow down the sound change.



■ EG DECAY

Adjusts the decay rate of the voice's (element's) envelope generator. Raise the slider to slow down the sound change.

■ EG SUSTN

Adjusts the sustain level of the voice's (element's) envelope generator. Raise the slider to increase the level.

■ EG RELSE

Adjusts the release rate of the voice's (element's) envelope generator. Raise the slider to slow down the sound change.

Important

- If Portamento Mode (→ REFERENCE: 1-30) is not set to "fingered" and you have connected a foot switch to the Portamento jack, the VP1 will produce portamento only while the switch is depressed.
- Some voices do not use EG or LFO functions. For these voices, changes to the EG or LFO parameters are meaningless.

MIDI Quick Edit Control

An external MIDI device can perform real-time editing of the Quick Edit panel's highlighted parameters. The external device uses MIDI control-change signals to control the "internal" positions of the four Quick Edit sliders. (The sliders themselves do not move.)

The four parameters available for editing are stored as voice data. To change the available parameters, you must use the △ and ▽ selectors to highlight the desired line of parameter names, then store the result as a new voice.

The external device identifies each slider by its MIDI control change number. You are free to reassign these change number allocations, as described in the REFERENCE section. (→ REFERENCE: 2-10)

FYI

- With the exception of the EF DEPTH parameter and the four EQ parameters, MIDI editing only affects parameters for elements that are on the same channel as the MIDI device, as determined by the "Basic Receive Channel" (→ REFERENCE: 2-8) and "Element Receive Channel" (→ REFERENCE: 1-19) settings.
- The Quick Edit parameters are designed primarily for editing, and may be less responsive to real-time control than the parameters assigned to the modulation ball, modulation wheels, and other real-time controllers. When you are controlling performance from an external MIDI, it is best to treat the Quick Edit parameters as relatively fixed, and minimize the number of times that you adjust them.

Voice Categories

Voices are grouped into categories that indicate the general sound type. Referring to categories can help you keep track of what each voice sounds like.

Category Listing

Each category is expressed as a name of four characters or less. The following table lists and describes the available categories.

4-character display	10-character display	Description
----	No Assign	(No category)
AcPf	Aco.Piano	Acoustic piano
ElPf	Ele.Piano	Electric piano
MKey	Misc.Kbd	Misc. keyboard
AGtr	Aco.Guitar	Acoustic guitar
EGtr	Ele.Guitar	Electric guitar
MGtr	MiscGuitar	Misc. guitar
Bass	Bass	Bass
Eth	Ethnic	Ethnic
CPrc	ChromPerc	Chromatic percussion
Perc	Percussive	Nonchromatic percussion
Drum	Drum set	Drum voice
Org	Organ	Organ
Bowd	BowedStrgs	Bowed strings
Pluk	PluckStrgs	Plucked strings
Orch	Misc.Orch	Misc. string solo
OEns	OrchEnsmbl	Orchestra ensemble
Chor	Choir	Choir
MEns	MiscEnsmbl	Misc. ensemble
Brs	Brass	Brass
Reed	Reed	Reed Pipe
Pipe	Pipe	Human
Voce	Voice	Voice
SLd	SynthLead	Synth lead
SPad	SynthPad	Synth pad
SCmp	SynthComp	Synth comp
SSFx	SynthSE	Synth sound effect
MSFx	MusicalSE	Musical sound effect
NSFx	NaturalSE	Natural sound effect
Smpl	PhraseSmpl	Phrase sample

When you store a voice to memory, you are free to change its category setting. (→ BASICS: 3-28, REFERENCE: 1-54)

Modes

The VP1 has three different operational modes. For detailed explanations of each mode, refer to the REFERENCE Section.

PLAY Mode

This is the mode that you usually operate in — the mode you use when playing the instrument or editing voices. While operating in PLAY mode, you can change voices and scenes, operate the controllers and Quick Edit sliders, and change various settings for each element or voice.

To enter this mode, press [PLAY]. The LED above the button comes on to indicate that you are operating in PLAY mode.

SYSTEM Mode

Use this mode to make system-wide settings common to all voices and operation. For example, you use SYSTEM mode to set up the tone generator, the keyboard, MIDI operation, and controller- number allocation. You also use it to record the greeting message that appears when you first switch on the VP1, and to select black-on-white or white-on-black display.

To enter this mode, press [SYSTEM]. The LED above the button comes on to indicate that you are operating in SYSTEM mode.

DISK Mode

Use DISK mode to transmit data between internal memory and floppy disk — to save data from memory to floppy, or to load data from floppy to memory. You can also use this mode to format new floppy disks and to rename floppy-disk files.

To enter this mode, press [DISK]. The LED above the button comes on to indicate that you are operating in DISK mode.

Basic Operations

Here we describe some of the basic operations that you will carry out frequently as you work with the VP1.

Switching the Mode

Select the mode by pressing the appropriate mode button — [PLAY], [SYSTEM], or [DISK]. With some minor exceptions, you are generally free to switch the mode at any time, regardless of the synthesizer's current status.

Selecting a Voice

There are four methods you can use to change voices while in PLAY mode.

■ Press the appropriate bank and program buttons.

Select the voice's bank by pressing the appropriate bank button ([A] ~ [D]), then select the voice by pressing the appropriate program button ([1] ~ [16]). If you are switching between voices belonging to the same bank, you need not press the bank button.

■ Rotate the dial.

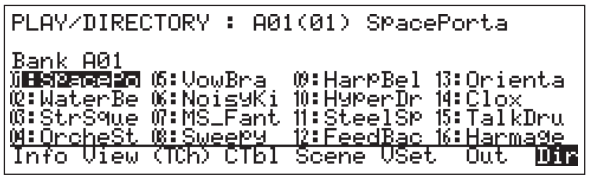
Rotate clockwise to select a voice with a higher voice number, or counterclockwise to select a voice with a lower voice number. Note that selection can move smoothly across bank boundaries — proceeding directly from A16 to B1, for example.

■ Use the [INC/YES] and [DEC/NO] buttons.

Press [INC/YES] to select a voice with a higher voice number; press [DEC/NO] to select a voice with a lower voice number. Once again, selection can move smoothly across bank boundaries: if you press [DEC/NO] while using voice D01, for example, the voice changes to C16.

■ Select a voice from the voice list.

When you first enter PLAY mode, the currently selected voice name appears in large letters at the center of the display. When you see this kind of display on the screen, you can press [F8]:Dir to switch to a list of the 16 voices in the currently selected bank.

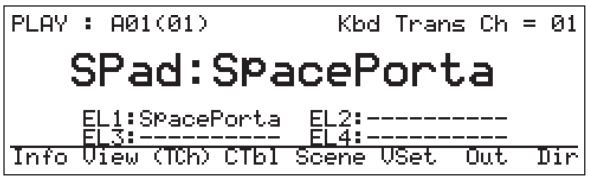


You are now free to select a different bank by pressing the appropriate bank button. Once you have chosen the bank, use the cursor buttons (◁△▽▷) to move the blinking highlight to the name of the voice you want to select, then press [ENTER] to select it. Alternatively, you can select the voice by rotating the dial or using the [INC/YES] or [DEC/NO] button.

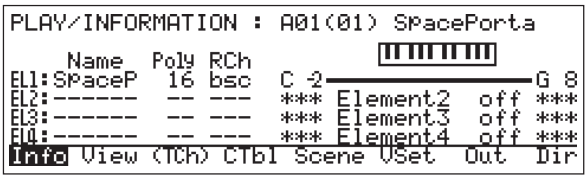
Selecting a Function

The bottom line of the screen displays the names of the functions that are currently available for selection. You can select any of these functions by pressing the function button (F1 ~ F8) located directly under the displayed function name.

For example, assume that you have just entered PLAY mode, so that the screen appears as shown below.



The line along the bottom of the screen shows eight functions available for selection. Pressing F1 , for example, selects the “Info” function, switching the LCD to the Information Display screen shown below.



FYI

Function names shown on the bottom line of the display may be enclosed in (parentheses), [brackets], or {curly brackets}. The meaning of each of these is as follows.

- Parentheses: The function will remain on only while you hold the function button down.
- Brackets: The function invokes a submode.
- Curly brackets: The function executes some action.

Returning to Previous Screen

Pressing a function button causes the screen to change to the corresponding display. When you are finished with the function, you can switch back to the original screen by pressing EXIT .

For example, pressing EXIT while the screen is displaying the “Information Display” (second illustration above) will return you to the initial PLAY-mode screen (first illustration above).

Pressing a mode button (PLAY , SYSTEM , or DISK) switches the display to the selected mode’s initial or previously displayed screen.

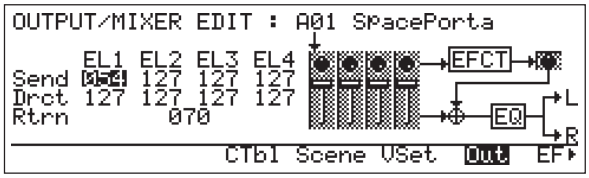
Moving the Cursor

Each screen allows you to make various settings. To select the item you want to set, use the cursor buttons (◁△▽▷) to move the cursor to the item.

A few screens are too large to fit completely on the LCD. You can scroll vertically through these screens using the △ and ▽ cursor buttons.

Changing Numerical Settings

Once you have moved the cursor to the item you need to set, you are ready to make the setting.



To change a numerical setting, proceed as follows.

■ Using the dial

Rotate clockwise to increase the value, or counterclockwise to lower it. Speed of rotation determines how quickly the value changes.

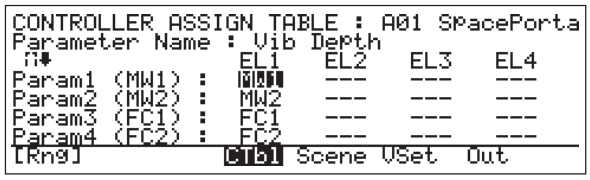
■ Using INC/YES and DEC/NO

Press INC/YES briefly to increment the value by 1, or hold the button down to increment continuously. Press DEC/NO to decrement the value by 1, or hold it down to decrement continuously.

Changing Multiple-Choice Settings

To set a multiple-choice item, you move through the possible selections until you reach the one you want.

The following screen, for example, allows you to make controller assignments for each element. Notice that the cursor is currently at the controller assigned to Parameter 1 of Element 1. The current setting is MW1 — but you can change this to some other controller (such as MW2 or FC1), or you can select “on” or “off”.



To make your selection, proceed as follows.

■ Using the dial

Turn the dial to move through possible selections.

■ Using INC/YES and DEC/NO

Press or hold down the appropriate button to move through the selections.

Entering Characters

Some functions allow you to input a name or include a comment. The Store function, for example, allows you to enter a new voice name, while disk functions allow you to name or rename a file.

As an example, consider the following screen. This type of screen appears when you are about to store a voice to memory. You use this screen to set or change the voice name, as explained below.

■ Selecting the character

Use the dial or the INC/YES or DEC/NO button to select a new character from the character list. As you move through the selections, the character marked by the top cursor (here, the underlined “W” in the name “Waterbell”) changes accordingly.

■ Selecting the character position

Use the ◁ and ▷ cursor buttons to move the top cursor (in the voice name, on the second line of the display) to the letter that you want to set or change. In the example above, the cursor is at the first character position.

■ Entering a space

Pressing F7 :{Spc} will change the currently marked character to a space. The cursor automatically advances to the next character.

■ Clearing the current name

Pressing F8 :{Clr} will delete all selected characters. The cursor returns to the leftmost character position.

■ Entering the name

When you have finished entry, press EXIT to store the name and return to the previous screen.

Important

- The VP1 ensures that filenames conform to MS-DOS standards. It will not allow you to use lowercase letters and unsupported symbols within these names.
- Filenames cannot start with a space. If you enter a space in the middle of a filename, the VP1 automatically converts the space into an underscore character. (If you leave the entire name blank, the VP1 converts the name to a string of hyphens.)

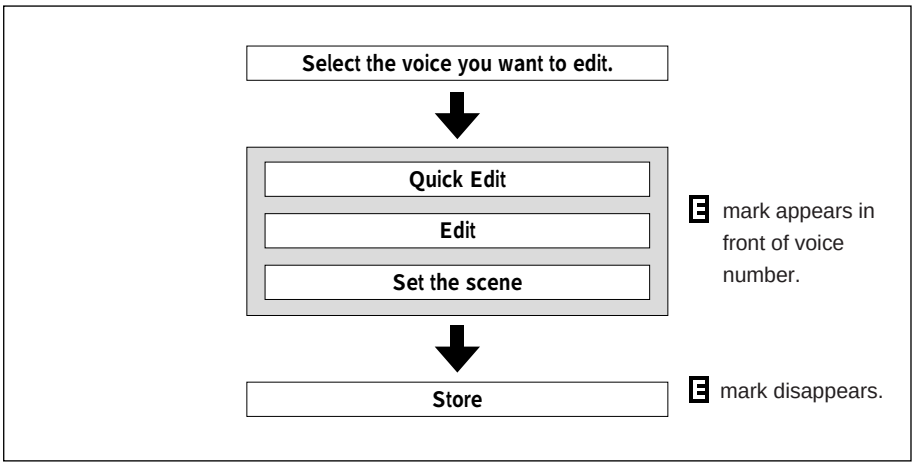
Voice Editing

In this section we present some basic information you need before you can begin to edit voices. We recommend that you quickly become familiar with the “Store” and “Compare” operations, as these are essential to successful editing.

General Editing Procedure

To edit a voice, you begin with one of the voices supplied on disk, then customize the accessible settings to change its sound. When you have finished editing, you can store the result as a new voice with its own voice name and number.

The general process is illustrated below.



When you start editing, an E mark appears in front of the voice number displayed on the screen. The mark indicates that the current voice is being edited but that the result has not yet been stored to memory.

Storing

To retain the results of editing, you must store the edited voice to memory — assigning it a voice number, name, category, and comment. If you forget to do this, the results of your editing will disappear when you switch voices.

The storing procedure is described below.

Important

- When you store a voice to a voice number, you erase the voice that was originally stored at that number. If you need to retain the original voice, save it to floppy disk before executing the storage procedure. (→ REFERENCE: 3-9)
- You can execute the storage procedure from any level within PLAY mode. You cannot perform storage from within SYSTEM or DISK mode.
- You cannot execute storage if the SYSTEM mode's "Memory Protect" setting is "on". (→ REFERENCE: 2-13)

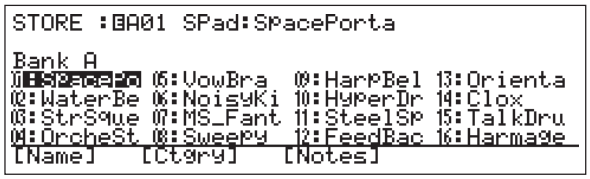
FYI

- You can use the Store function to copy an existing (unedited) voice to a different voice number. Select the voice you want to copy, then store it to the other voice number without making any changes. You will then have the identical voice existing at two different voice numbers.
- When storing a voice, you can enter a comment that will subsequently appear in a special "Notes" window whenever the voice is selected. If you do not want to generate such a window, enter a space as the first character of the comment.

Procedure

1. Press [STORE].

▼ The LCD switches to the following display.



2. Use the bank button, dial, cursor buttons, [INC/YES] button, or [DEC/NO] button to move the cursor to the voice number that you want to store to.

▼ When the cursor is at the desired voice number, you are ready to continue. If you need to register a new name for your edited voice, proceed to Step 3 below. If you want to retain the name that is currently highlighted on the screen, jump to Step 5.

3. Press [F1] :[Name].

▼ The voice-name entry screen appears.

4. Enter the voice name.

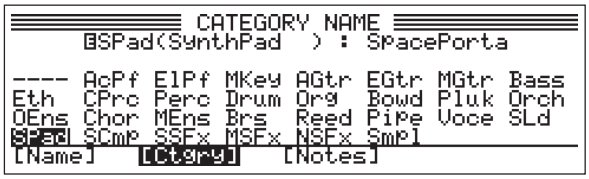
Enter a voice name of up to ten characters. The entry procedure was described under the section entitled “Entering Characters,” above. (→ BASICS: 3-26).

When you have finished, press [EXIT]. The VP1 registers the new name and returns you to the previous screen.

5. Press [F3] :[Ctgry] to set a new category.

(If you do not need to change the category, jump to Step 7.)

▼The category selection screen appears.



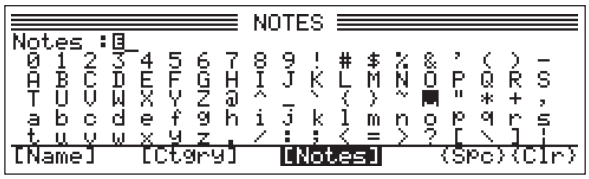
6. Select a category.

Move the cursor to the desired category name, then press [EXIT] to select the category and return to the original screen. For information about categories, refer to the section entitled “Voice Categories,” above. (→ BASICS: 3-21)

7. Press [F5] : [Notes] to enter a comment.

(If you do not need to change the comment, jump to Step 9.)

▼The NOTES entry screen appears. You can now enter the contents of the comment that will appear whenever the voice is selected.



8. Enter a comment.

Enter a comment of up to 32 characters (→ BASICS: 3-26), then press [EXIT] to return to the previous screen.

The VP1 will display a window showing this comment whenever you select this voice. If you do not want display a note window for this voice, enter a space as the first character of the comment.

9. Press [ENTER].

▼The screen displays a message asking for confirmation.

10. Press [INC/YES].

▼Press [INC/YES] button to answer “Yes” to the confirmation message and execute the store. If you wish to cancel the operation without storing, press [DEC/NO] instead.

11. Press [EXIT].

▼The VP1 selects the newly stored voice as your current voice, and returns you to the screen that was displayed just before you began the storage procedure.

Comparing

While you are editing a voice, you can use the Compare function to compare the voice's new sound against its original sound.

When you start the compare operation, the keyboard sound temporarily reverts to the sound of the original (unedited) voice. The displayed parameter values and the red LEDs along the right of the Quick Edit sliders also return to their unedited status. A **E** mark appears in front of the voice number on the screen to indicate that you are currently in Compare mode, and the cursor shape changes to an underline.

Important

- Editing functions are disabled during comparison.
- The Compare function will not operate if you have not yet edited the voice.

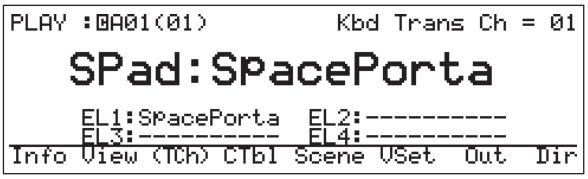
FYI

- You can combine Quick Edit and Compare functions to achieve dynamic sound changes during live performance. First use the Quick Edit functions to change the sound of the voice, then toggle the Compare function on and off to switch back and forth between the edited and unedited sounds.
- The comparison function remains available during the storing procedure, so that you can compare voice names, categories, and comments.

Procedure

1. During (the course of) editing, press COMPARE**.**

▼The LED above the button begins to blink.



2. Play (at) the keyboard to reproduce the original sound.

3. Press COMPARE **to return to the editing process.**

Copying

While editing a voice, you are free to copy various data from other voices or from the original version of the voice you are working on. Available copy operations are listed below; refer to the indicated pages for details.

- Voice Copy (by Store function) (→ REFERENCE: 1-54)
- Effect Copy (→ REFERENCE: 1-50)
- Element Copy (→ REFERENCE: 1-38)
- Equalizer Copy (→ REFERENCE: 1-53)

ELEMENT SELECT and ELEMENT ON/OFF

During editing, program buttons [1] ~ [4] operate the ELEMENT SELECT function, while program buttons [9] ~ [12] operate the ELEMENT ON/OFF function. ELEMENT SELECT and ELEMENT ON/OFF are special functions designed to facilitate editing.

■ ELEMENT SELECT

[1] (E1) [2] (E2) [3] (E3) [4] (E4)

While you are editing, you can use these buttons to switch the element that you are working on. Assume that the cursor is currently marking a parameter for element 1. If you now press [3] (E3), the cursor jumps to the same parameter for element 3.

■ ELEMENT ON/OFF

[9] (E1) [10] (E2) [11] (E3) [12] (E4)

You can use these buttons to temporarily switch off the sound for specific elements. This allows you to isolate the sound of a single element, or hear how the voice sounds when one or more elements are suppressed.

Each button acts as a toggle — press once to switch the sound off, press again to switch it back on. The LED above each button remains lit while the element's sound is on, and blinks to indicate that the sound is switched off.

Important

- The element functions described above are designed to simplify the work of editing. Button configurations are not reflected in the edited voice data that you store to memory.
- These element functions are available only during editing.

REFERENCE

Chapter 1

PLAY Mode

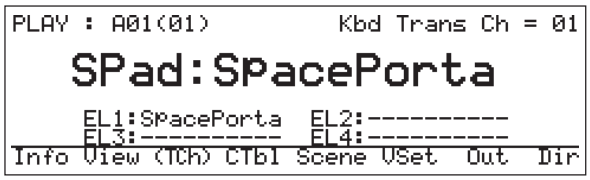
This chapter describes all PLAY-mode functions. The first part of the chapter describes the functions you use to select and play voices. The second part describes the voice editing functions.

Outline

You use PLAY mode to select, play, and edit voices.

The VP1 automatically enters PLAY mode when power first comes on. If you are operating in a different mode, you can switch back at any time by pressing the [PLAY] button. The LED above the [PLAY] button remains ON while the VP1 is in PLAY mode.

When you enter or return to PLAY mode, the LCD displays the main PLAY-mode screen illustrated below. The large letters at the center of the screen tell you the category and name of the currently selected voice.

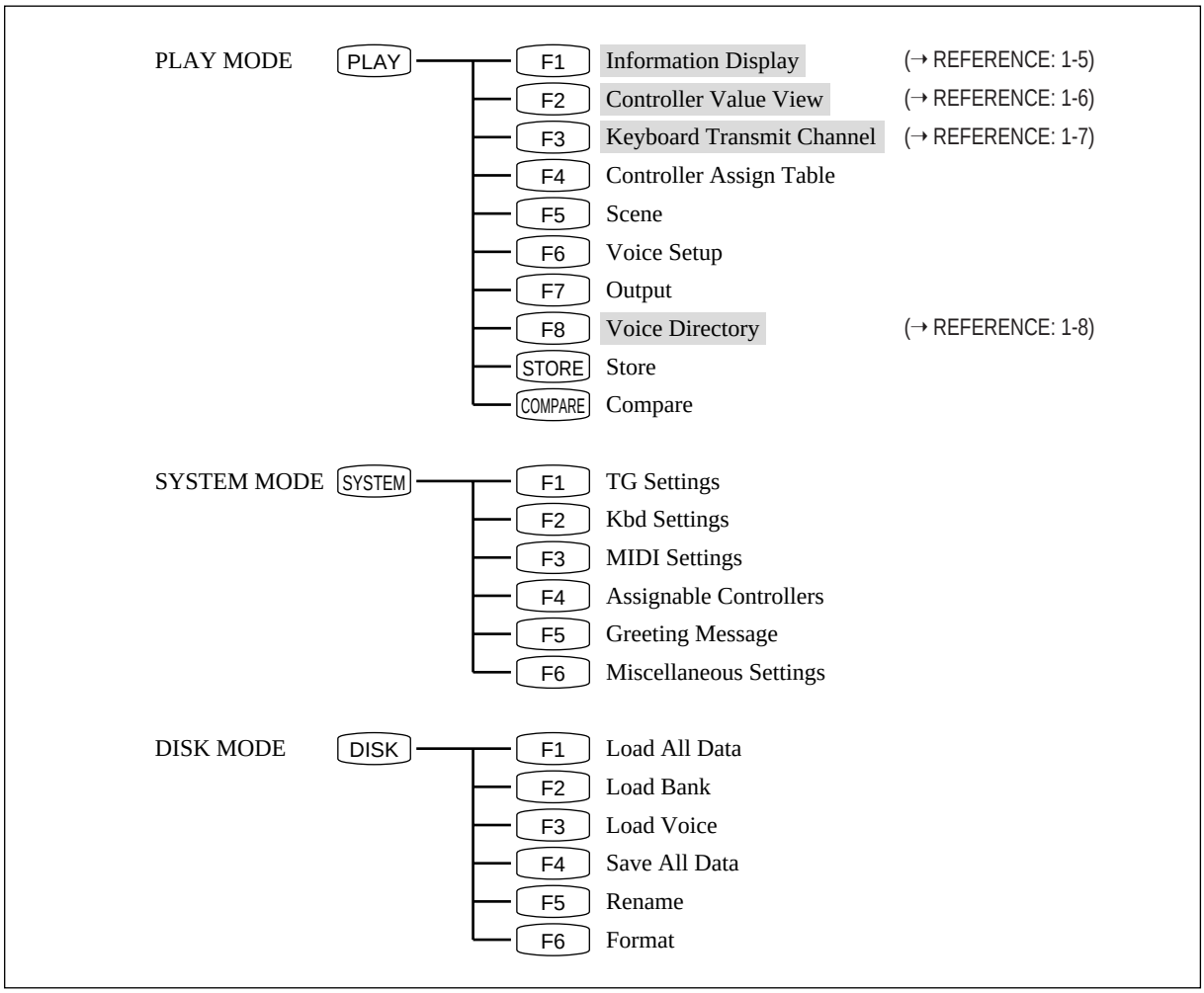


This chapter is divided into two parts. The first part describes the PLAY-mode functions for voice selection and performance. The second part (→ REFERENCE 1-9) describes the mode's voice-editing functions.

Performance and Status Functions

The first part of this chapter describes the “PLAY” function and the four callable functions denoted by shaded boxes below. You use these functions to select and play voices, to view status information, and to select the keyboard transmission channel. These functions do not affect existing voice settings.

For details about the functions you can use to change the voice settings, refer to the second part of this chapter. (→ REFERENCE 1-9)



FYI

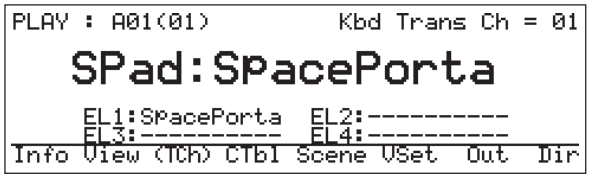
- The F1, F2, F3, and F8 functions do not perform any editing. Pressing these function keys will not cause an “E” mark (editing mark) to appear in front of the voice name on the display.

PLAY

PLAY

Selects and plays voice.

Program Number	A01 ~ D16



Description

- This function sets the VP1 for normal performance, so that you can select and play different voices and operate the various controllers and sliders. You are also free to proceed directly to any of the other eight PLAY functions described in this chapter, which you can use to check current settings or to edit voices.
- The top line of the screen indicates the currently selected voice number and keyboard transmission channel.
- The large letters at the center of the display indicate the voice's category (→ BASICS: 3-21) and name.
- For some voices, the screen will also include a "Notes" window displaying a comment about the voice. If such a window appears, you can close it by pressing EXIT, then reopen it by pressing ENTER. (→ BASICS: 3-28)
- For details about the methods you can use to select the voice, refer to the BASICS section. (→ BASICS: 3-23)
- Use controllers to control the selected voice's characteristics, pitch, and volume. (→ BASICS: 3-8)
- Use the scene buttons and SCENE CONTROLLER to dynamically control the selected voice's characteristics, pitch, and volume. (→ BASICS: 3-11)
- Use the Quick Edit feature for simple control and editing of various voice characteristics and settings. (→ BASICS: 3-16)

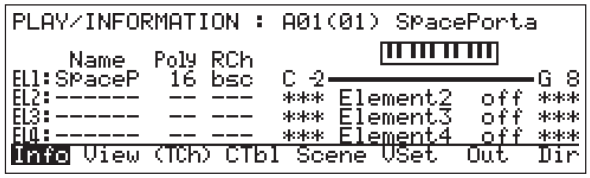
- F1 : Switches the screen to an "Information Display" showing the following information about each of the voice's elements: the element's name, its maximum polyphony, its receive-channel setting, and the keyboard range over which it is effective. (→ REFERENCE: 1-5)
- F2 : Displays a "Controller Value View" showing the current MIDI controller output values. (→ REFERENCE: 1-6)
- F3 : Allows you to change the keyboard transmission channel — the MIDI channel carrying outgoing keyboard information. (→ REFERENCE: 1-7)
- F8 : Displays a list of the 16 voices in the currently selected bank. You can select a new voice directly from the list. (→ REFERENCE: 1-8)
- F4 ~ F7 : Voice editing functions (→ REFERENCE: 1-9)

INFORMATION DISPLAY

PLAY → F1 : Info

Displays detailed information about each of the voice's elements.

no settings



Description

- This function displays the following information about each element of the currently selected voice.

  Name: Shows the element's name. If the element is unused, a string of hyphens is displayed instead.

  Poly: Indicates the element's maximum polyphony — the maximum number of notes that can be played simultaneously.

  RCh (MIDI Receive Channel): Indicates the MIDI channel that drives the element's sound.

  Range display (right side of LCD): The horizontal bar shows the keyboard range over which the element is effective. The values to the left and right of the bar indicate the keys at the low and high end of the range.

- To return to the initial PLAY screen, press F1 (Info), EXIT, or PLAY.
- You can continue to play the instrument and switch voices while the LCD is showing this Information Display.
- To switch to another PLAY-mode function, press F2 ~ F8.

FYI

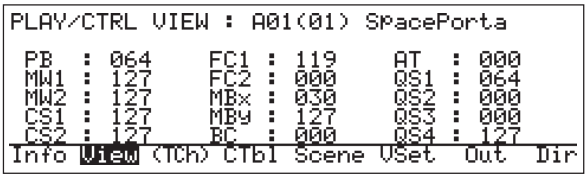
- You can use the VOICE SETUP function's "Element Copy" feature to copy an element from one voice to another. (→ REFERENCE: 1-38)
- The VOICE SETUP function's "MaxNotes" setting determines the element's maximum polyphony. (→ REFERENCE: 1-18)
- The VOICE SETUP function's "Receive Channel" setting determines the element's MIDI receive channel. (→ REFERENCE: 1-19)
- The VOICE SETUP function's Note Limit settings ("NtLmtHi" and "NtLmtLo") determine the element's keyboard range. (→ REFERENCE: 1-27)

CONTROLLER VALUE VIEW

PLAY → F2 : View

Displays the current value of each controller.

no settings



Description

- The screen displays the current position (MIDI output value) for each controller. The position is indicated as an integer value.

  Controller abbreviations are as follows.

PB:	Pitch wheel
MW1:	Modulation wheel 1
MW2:	Modulation wheel 2
CS1:	Continuous slider 1
CS2:	Continuous slider 2
FC1:	Foot controller 1
FC2:	Foot controller 2
MBx:	Modulation ball (X direction)
MBy:	Modulation ball (Y direction)
BC:	Breath controller
AT:	Aftertouch
QS1:	Quick Edit slider 1
QA2:	Quick Edit slider 2
QA3:	Quick Edit slider 3
QS4:	Quick Edit slider 4

- The displayed values change in response to controller movements.

- To return to the main PLAY screen, press F2 :View, EXIT, or PLAY.
- You can continue to perform and switch voices while the LCD is displaying the Controller Value View.
- To switch to another PLAY-mode function, press F1 or F3 ~ F8.

FYI

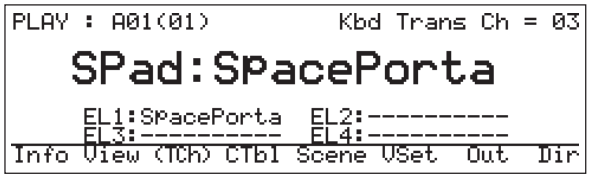
- The display does not show velocity and footswitch values.
- The displayed values reflect the physical controller positions; they do not reflect scene-related internal controller settings.
- The displayed values do not reflect control-change data received from external MIDI devices.

KEYBOARD TRANSMIT CHANNEL

PLAY → F3 : TCh + 1 ~ 16

Changes the keyboard transmit channel.

Kbd Transmit Ch	1 ~ 16



Description

- Use this function to change the channel over which the VP1 transmits performance data (note-on and controller data). The channel setting is essentially a system parameter: you can make the same setting using the SYSTEM mode's MIDI SETTINGS screen. (→ REFERENCE: 2-8) The PLAY-mode function described here has been included to allow you to change the channel rapidly during performance.

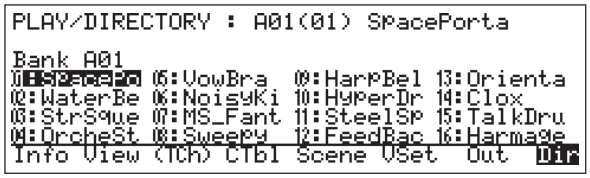
- When you change the channel, the SYSTEM mode's "Kbd Transmit Channel" parameter automatically changes to match the new setting.
- To select the channel (1 to 16), hold down F3 :(TCh) and press the appropriate program button (1 ~ 16).

VOICE DIRECTORY

PLAY → F8 : Dir

Displays a list of the voices in the selected bank.

Program Number	A01 ~ D16



Description

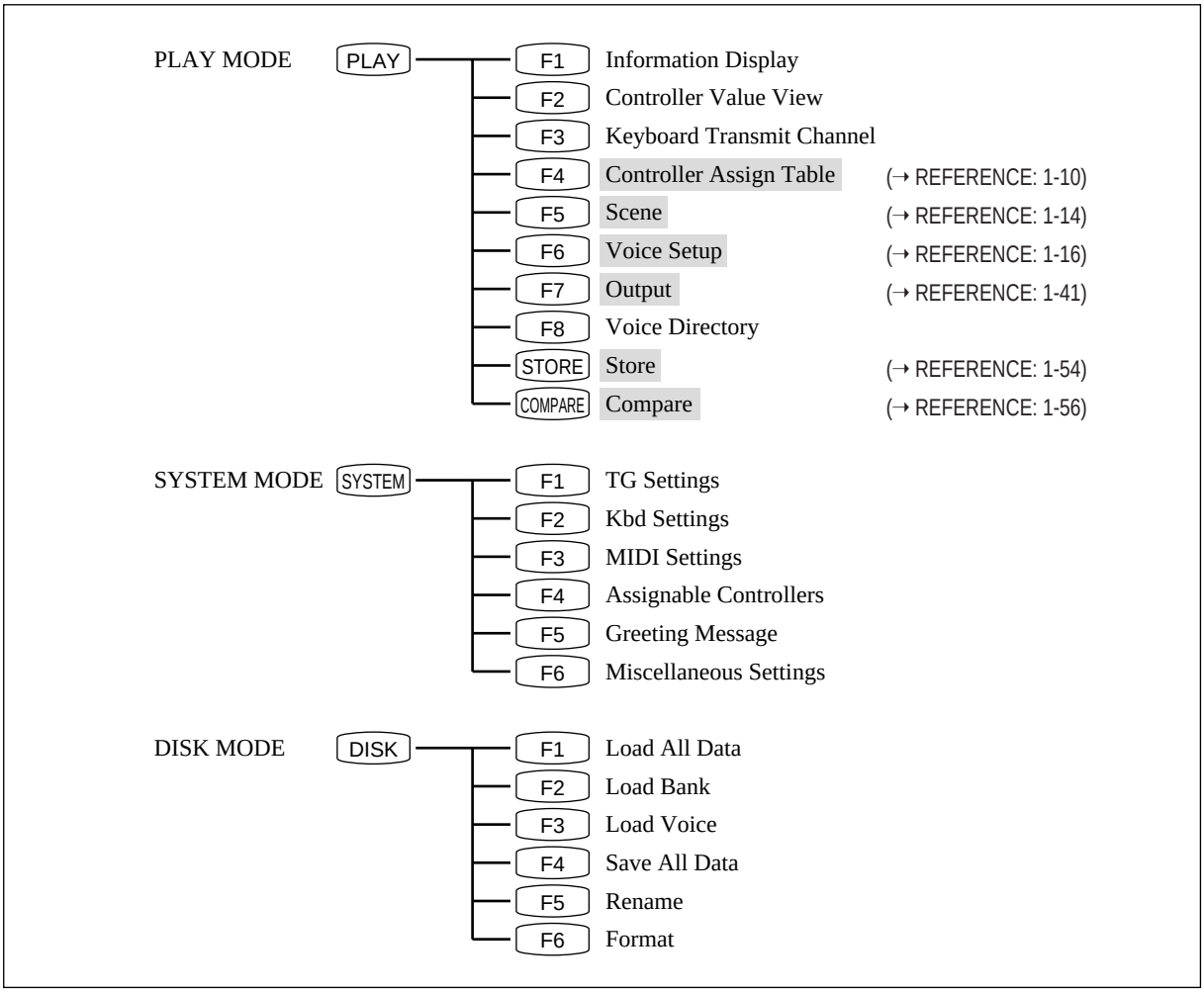
- This function displays a list of the 16 voices in the currently selected bank. You are free to change the bank display or switch to a different bank and voice while the display is on the screen.

- To change the bank display, press the appropriate bank button (A ~ D). A different list of voices will appear on the screen. If the displayed bank is different from the currently selected bank, the bank-button LED, the cursor, and the screen's "Bank" display will all flash.
- To select a voice from the displayed list, use the cursor buttons (◁△▽▷) to move the cursor to the voice name, then press ENTER. You can also select the voice by pressing the INC/YES or DEC/NO button, rotating the dial, or pressing a program button (1 ~ 16).
- The voice directory stays on the display even after you change the voice.

- To return to the main PLAY screen, press F8 :Dir, EXIT, or PLAY.
- To switch to another PLAY-mode function, press F1 ~ F7.

Editing Functions

The remainder of this chapter describes the various PLAY-mode editing functions — the functions indicated by the shaded boxes below. You can use these functions to reassign controller parameters, change the settings and output levels for each element, store editing results to memory, and compare edited and unedited versions of the same element or voice.



Important

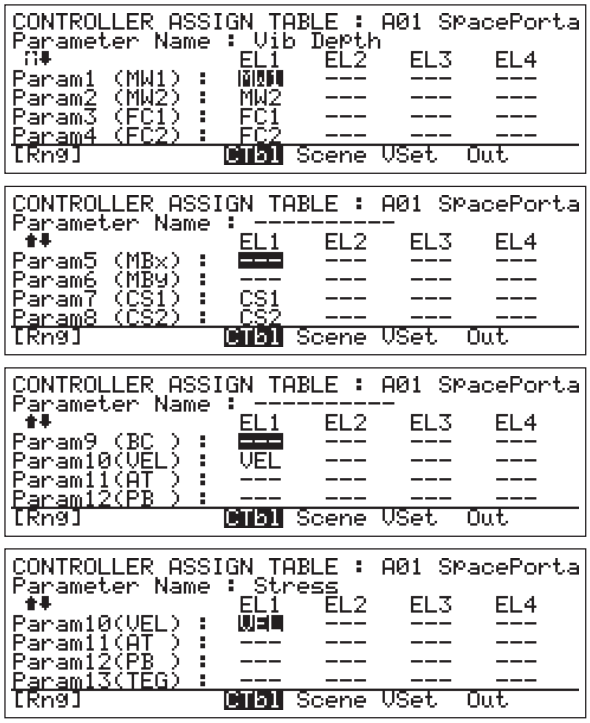
- To retain editing results, you must use the Store function to store the results into memory. (→ REFERENCE: 1-54)

CONTROLLER ASSIGN TABLE

PLAY → F4 : CTbl

Assigns controllers to parameters.

Parameters 1 to 13 for Elements 1 to 4	MW1 ~ TEG, off



Description

- Use this function to assign controllers to parameters. Each element has up to 13 preset controller-accessible parameters. This function allows you to link each of these parameters (with the exception of the velocity parameter) to the controller of your choice.

- The full list of parameters is too long to fit on the LCD. Use the △ and ▽ cursor buttons to scroll vertically through the list as necessary.
- To make an assignment, move the cursor to the appropriate parameter and element, then choose the controller you want to assign. The second line of the LCD displays the descriptive name of the parameter marked by the cursor.
- Controller abbreviations are as follows.

  MW1: Modulation wheel 1
  MW2: Modulation wheel 2
  FC1: Foot controller 1
  FC2: Foot controller 2
  MBx: Modulation ball (X direction)
  MBy: Modulation ball (Y direction)
  CS1: Continuous slider 1
  CS2: Continuous slider 2
  BC: Breath controller
  VEL: Velocity
  AT: Aftertouch
  PB: Pitch wheel
  TEG: Touch EG

- If you do not want to assign a controller to a particular parameter, set the entry to "off". The parameter will then take the value recorded for it in the element's initial scene. (→ REFERENCE: 1-14)
- You can use the [F1]:[Rng] function to set the control range for the entry currently marked by the cursor. (Refer to the next page for a description of control range.) This function is not available for entries marked "---".

- To return to the main PLAY screen, press [EXIT] or [PLAY].
- To switch to another PLAY-mode function, press [F5] ~ [F7].

Important

- You cannot assign the same controller to more than one parameter for the same element. If you assign an already assigned controller, the previous assignment automatically switches to "off".
- You cannot change the controller assigned to the velocity parameter.
- You cannot assign controllers to unused parameters. You cannot assign controllers in relation to unused elements.
- If you assign the pitch wheel to a parameter other than pitch, the wheel will continue to control pitch while simultaneously controlling the selected parameter.

FYI

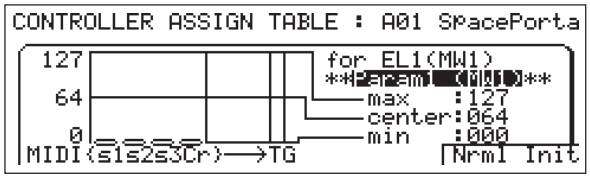
- During performance, you can use this function to view the current controller assignments.
- Markings at the upper left of the LCD indicate the direction in which scrolling is possible. A ▼ marking indicates that you can scroll downward only; ▲▼ means that you can scroll in either direction; ▲ means that you can scroll upward only.
- Use the [1] ~ [4] buttons to select the element, and the [9] ~ [12] buttons to toggle elements on and off.

CONTROLLER ASSIGN TABLE: Control Range

PLAY → F4 : CTbl → F1 : [Rng]

Determines the degree by which a parameter value changes in response to controller movement.

Max	0 ~ 127
Center	0 ~ 127
Min	0 ~ 127



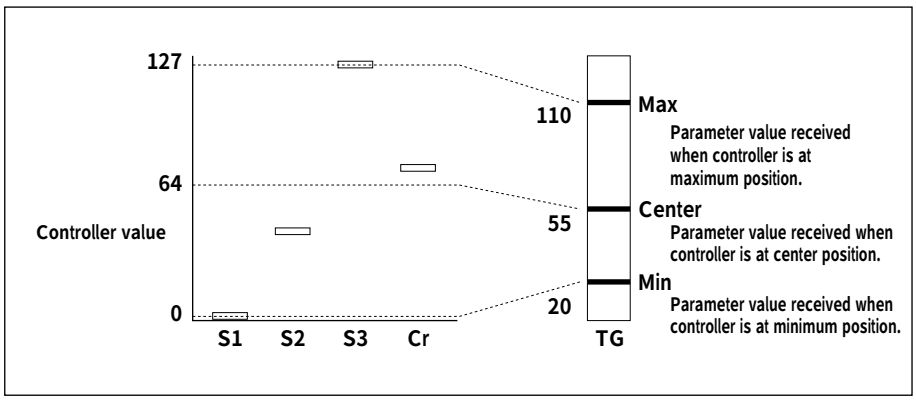
Description

- This function sets the amount by which the parameter value changes in response to controller movement. The control range is determined by the following three values.

  Max: The value that the parameter takes when the controller is at its maximum position. The controller's maximum position is represented by the number 127. (For example, the foot controller is in this position when it is fully depressed.)

  Center: The value the parameter takes when the controller is at its center position (controller value = 64). (For example, the MODULATION 2 wheel takes this value when at its click-stop position.)

  Min: The value the parameter takes when the controller is at its minimum position of "0". (For example, the foot controller is in this position when it is fully raised.)



- The "S1", "S2", and "S3" items in the display indicate the controller settings recorded for scenes 1, 2, and 3. The "Cr" item indicates the current internal controller setting. Note that these four items do not appear on the Control Range screen for the velocity controller.

- You can switch to a different element or parameter without leaving the Control Range display. To change the element, press [1] ~ [4]. To change the parameter, move the cursor to the parameter name, then rotate the dial or operate the [INC/YES] or [DEC/NO] button until the desired name appears on the screen.

- After setting the Max and Min values, you can press [F7] :Nrml to automatically set the Center value to [(Max + Min)/2].
- Press [F8] :Init to restore values to their factory defaults: Max=127, Center=64, Min=0.

- Press [EXIT] to return to the previous CONTROLLER ASSIGN TABLE screen. Press [PLAY] to return to the main PLAY-mode screen.

FYI

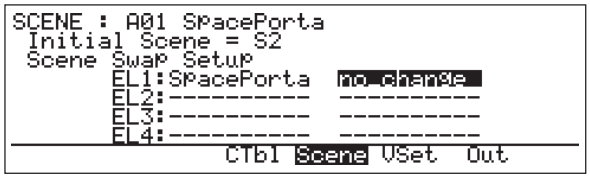
- You can use the [1] ~ [4] buttons to select the element, and the [9] ~ [12] buttons to toggle elements on and off.
- You can record the current controller positions into a scene. (→ REFERENCE: 1-14)

SCENE

PLAY → F5 : Scene

Records a scene into an element, or selects the voice's initial scene.

Initial Scene	s1 ~ s3
EL1 ~ EL4	no change, s1<->s2, s2<->s3, s3<->s1, current>s1, current>s2, current>s3



Description

- Use this function to select the initial scene, or to register a scene.

- Initial Scene: Establishes S1, S2, or S3 as the *initial scene*, If the "Controller Init" parameter is set "on", the VP1 automatically selects the initial scene whenever you switch into the voice (→ REFERENCE: 2-4).
- EL1 ~ EL4: Use this area to swap scenes among elements, or to register the current controller positions into a scene for an element. Refer to the next page for details.
- no change: Select "no change" if you do not want to change the current scene setting.

- Press EXIT or PLAY to return to the main PLAY-mode screen.
- To switch to another PLAY-mode function, press F4, F6, or F7.

Important

- Remember that new scene settings are like all other editing changes: if you forget to store the edited results to memory, the new settings will be lost when you switch to a different voice. (→ REFERENCE: 1-54)

FYI

- To change the number of the initial scene, move the cursor to the "Initial Scene" entry on the display, then press the appropriate Scene button (SCENE1, SCENE2, or SCENE3), turn the dial, or press the DEC/NO or INC/YES button.
- You can use the 1 ~ 4 buttons to select the element, and the 9 ~ 12 buttons to toggle elements on and off.

Procedure

■ Swapping Scenes

1. Select the scene swap: s1↔ s2, s2↔ s3, or s3↔ s1.

2. Press ENTER **.**

▼ The screen displays the "Are you sure?" query.

3. To execute the swap, press INC/YES **.**

To cancel and return to Step 1, press DEC/NO or EXIT .

■ Recording Current Controller Positions

1. Set controllers into the positions you want to store for the scene.

2. Select the scene you want to store to: current>s1, current>s2, or current>s3.

3. Press ENTER **.**

▼ The screen displays the "Are you sure?" query.

4. To store the scene, press INC/YES **.**

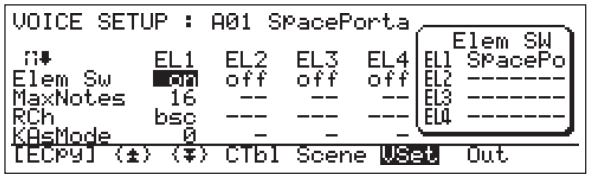
To cancel and return to Step 1 above, press DEC/NO or EXIT .

VOICE SETUP

PLAY → F6 : VSet

Sets a wide range of parameters for each voice element.

For details about settings, refer to descriptions starting on the next page.



Description

- The VOICE SETUP function implements detailed settings for each element. Settable parameters are described sequentially (in the order in which they appear on the display) starting from the next page. (→ REFERENCE: 1-17 to 1-40)

- The full list of parameters is too long to fit on the LCD. You can scroll through the list in either of two ways, as follows.
  Use the ▽ and △ cursor buttons to scroll one line at time.
  Press F2 : ± or F3 : ∓ to scroll back or ahead by one page (four lines).

- You can use the F1 :[ECpy] function to copy an element from another voice into the voice that you are working on. (→ REFERENCE: 1-38)
- As you scroll through the parameter list, you will notice a dividing line ("-----") between the "MicroTune" and "PortaMode" parameters. When you copy an element, all parameters listed below the line are copied along with the element. Parameters above the line are not copied.

- Press EXIT or PLAY to return to the main PLAY-mode screen.
- To switch to another PLAY-mode function, press F4, F5, or F7.

FYI

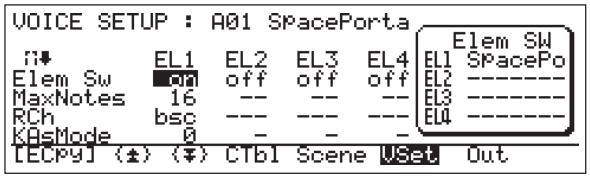
- Markings at the upper left of the LCD indicate the direction in which scrolling is possible. A ⇵↓ marking indicates that you can scroll downward only; ↑↓ means that you can scroll in either direction; ↑⇵ means that you can scroll upward only.

VOICE SETUP: Element Switch

PLAY → F6 : VSet → Move cursor to Elem Sw.

Switches elements on or off.

Elem Sw	off, on



Description

- Switches each element on or off. The VP1 does not generate sound for elements that are set off.
- The window at the right of the screen lists the names of the elements that are “on”. Elements that are “off” are listed as “------”.

Important

- If an element is “off”, you cannot make any other VOICE SETUP settings for it. All subsequent parameter entry spaces for that element will appear as blank lines (“---”).
- You cannot copy an element unless the destination element’s “Element Switch” setting is “on”. (→ REFERENCE: 1-38)

FYI

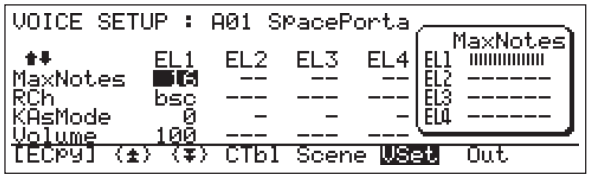
- You can use the VOICE SETUP function’s “Element Copy” feature to copy any element to the voice you are working on. (→ REFERENCE: 1-38)
- You can use the 1 ~ 4 buttons to select the element, and the 9 ~ 12 buttons to toggle elements on and off during editing.
- When you switch an element (element 2 ~ 4) from off to on, the element’s name becomes the same as the name displayed for Element 1.

VOICE SETUP: Max Notes

PLAY → F6 : VSet → Move cursor to MaxNotes.

Sets maximum polyphony for each element.

MaxNotes	0 ~ 16 (Total for voice must not exceed 16)



Description

- Sets the maximum polyphony (maximum number of notes that can be played simultaneously) for each element.
- Unlike other changes you make in the VOICE SETUP screen, changes to the MaxNotes settings do not take effect unless you press the ENTER button to record them. (When you press ENTER, the screen displays “Now executing!” to indicate that the VP1 is writing the settings to memory.)
- Maximum polyphony for the entire voice (all four elements) must not exceed 16. If you attempt to exceed this value, the VP1 automatically decrements settings, starting from Element 4 and working backward as necessary, to keep the total at 16.
- The window at the right of the screen displays the current MaxNotes settings in graphical form. Elements that are “off” are indicated as “------”.

Important

- Maximum polyphony for the entire voice (all four elements) cannot exceed 16.
- If you set an element’s polyphony to 0, the VP1 will not produce any sound for the element.
- You cannot set a value for an element whose Element Switch is set “off”. (→ REFERENCE: 1-17)

FYI

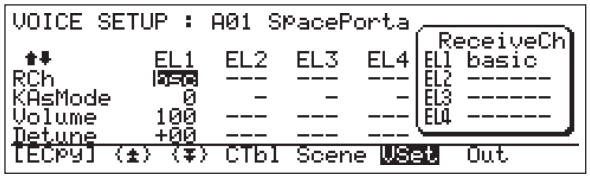
- Set the MaxNotes value to 1 to produce a “monophonic” element.
- The “Key Assign Mode” setting determines which notes are sounded when the number of keys pressed exceeds the maximum polyphony. (→ REFERENCE: 1-20)
- You can use the 1 ~ 4 buttons to switch among the elements, and the 9 ~ 12 buttons to toggle elements on and off during editing.

VOICE SETUP: Receive Channel

PLAY → F6 : VSet → Move cursor to RCh.

Sets the MIDI receive channel for each element.

RCh	basic, 1 ~ 16



Description

- Designates the MIDI receive channel for each element. External MIDI data arriving over the designated channel will drive the element's sound.

- If the setting is "basic" (the usual setting), the SYSTEM mode's "Basic Receive Channel" parameter selects the receive channel. (→ REFERENCE: 2-8)
- Use the numerical settings (1 ~ 16) when you want to allocate specific MIDI channel(s) to specific elements. This allows you to have different channels driving different elements.

- The window at the right of the screen lists the current channel settings. If the element is "off", the setting is listed as "------".

Important

- You cannot set a receive channel for an element whose Element Switch is "off". (→ REFERENCE: 1-17)

FYI

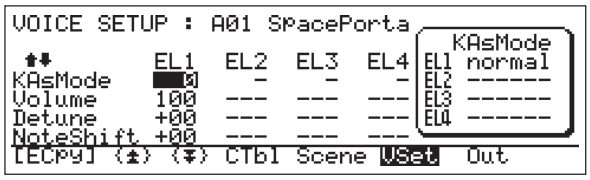
- By setting all elements to different values, you can have the VP1 produce four separate "voices" in response to incoming MIDI data.
- You can use the 1 ~ 4 buttons to switch among the elements, and the 9 ~ 12 buttons to toggle elements on and off during editing.

VOICE SETUP: Key Assign Mode

PLAY → F6 : VSet → Move cursor to KAsMode.

Determines which notes are sounded when the number of keys pressed exceeds the maximum polyphony.

KAsMode	If MaxNotes = 1, then
	0: normal, 1: lo on,
	2: hi on, 3: yamaha
	If MaxNotes > 1, then
	0: normal, 1: lo rem,
	2: hi rem



Description

- This setting determines how the VP1 reacts when the number of notes played exceeds the maximum polyphony setting. More specifically, the setting determines which notes of an element are sounded when the number of notes played (either pressed at the keyboard or received as note data via MIDI) exceeds the element's MaxNotes setting.
- For information about the MaxNotes setting, refer to the explanation on page 1-18 above. (→ REFERENCE: 1-18)
- Available settings differ depending on whether MaxNotes is set to 1 (monophonic) or more than 1 (polyphonic).

- If MaxNotes is set to 1, the following selections are available.

  0: normal

  Newest played note is sounded.

  1: lo on

  Lowest note is sounded, regardless of order in which notes are played.

  2: hi on

  Highest note is sounded, regardless of order in which notes are played.

  3: yamaha

  When a two-note combination is played, the newest played note is sounded — as under "normal" operation, described above. If the sounded note is the higher of the two, then a subsequent note sounds only if it is still higher. If the sounded note is the lower of the two, then a subsequent note sounds only if it is still lower.

- If MaxNotes is set to 2 or above, available settings are as follows.

  0: normal

  Newest played notes are sounded. (Newest notes get precedence.)

  1: lo rem (lowest note remains)

  The lowest existing note always remains; for all other notes, new notes take precedence over old notes. (First precedence to lowest note; second precedence to newest notes)

  2: hi rem (highest note remains)

  The highest existing note always remains; for all other notes, new notes take precedence over old notes. (First precedence to highest note; second precedence to newest notes)

- The window at the right of the screen indicates the current setting for each element. If the element is “off”, the setting is listed as “------”.

Important

- You cannot set an element whose Element Switch is “off”. (→ REFERENCE: 1-17)

FYI

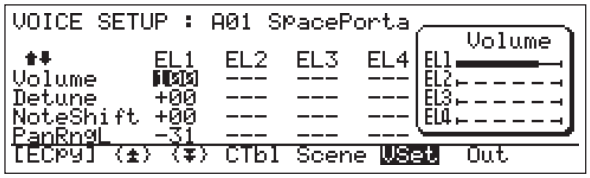
- You can use the [1] ~ [4] buttons to switch among elements, and the [9] ~ [12] buttons to toggle elements on and off during editing.

VOICE SETUP: Volume

PLAY → F6 : VSet → Move cursor to Volume.

Sets the volume for each element.

Volume	0 ~ 127



Description

- Sets the output level for each element. Larger values correspond to louder output.
- The window at the right of the screen indicates the current volume setting for each element. If the element is "off", the setting is listed as "------".

Important

- If you set the element's volume to 0, the VP1 will not produce any sound for the element.
- You cannot set the volume for an element whose Element Switch is "off". (→ REFERENCE: 1-17)

FYI

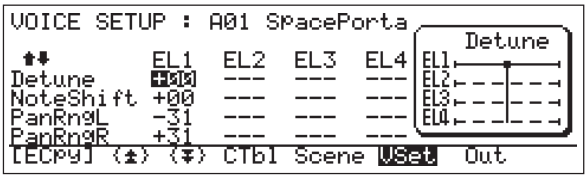
- The signal going to the VP1's OUTPUT jacks is adjusted first according to the volume setting described here. When the signal reaches the mixer, the level is adjusted again according to the Mixer volume settings. (→ REFERENCE: 1-41) The signal then moves through the effects and equalizer stages before exiting the VP1 at the OUTPUT jacks.
- The signal going to the VP1's ELEMENT jacks is adjusted only by the volume setting described here. The signal then passes directly to the jacks with no further adjustment.
- You can use the 1 ~ 4 buttons to switch among elements, and the 9 ~ 12 buttons to toggle elements on and off during editing.

VOICE SETUP: Detune

PLAY → F6 : VSet → Move cursor to Detune.

Sets fine-tuning for each element.

Detune	-15 ~ +15



Description

- Sets fine-tuning (detuning) of the element's pitch. A positive value raises the pitch; a negative value lowers it.
- The window at the right of the screen displays the current detuning settings in graphical form. Elements that are "off" are indicated as "------".

Important

- Detuning has no effect on single-element voices.
- You cannot set this value for elements whose Element Switch is "off". (→ REFERENCE: 1-17)

FYI

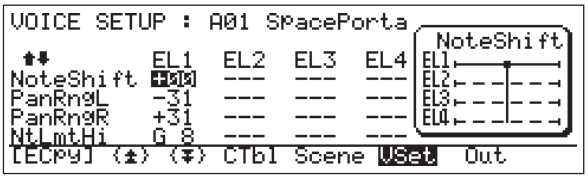
- To produce a chorus effect, set slightly different detune values for each element of the voice. (This effect is available only on multielement voices.)
- To alter pitch by semitone intervals, use the NoteShift setting described on the next page.
- You can use the 1 ~ 4 buttons to switch among elements, and the 9 ~ 12 buttons to toggle elements on and off during editing.

VOICE SETUP: Note Shift

PLAY → F6 : VSet → Move cursor to NoteShift.

Sets tuning for each element, in semitone increments.

NoteShift	-48 ~ +48



Description

- Sets the number of semitones by which the element's pitch is raised or lowered. A positive value raises the pitch; a negative value lowers it.
- The window at the right of the screen displays the current settings graphically. Elements that are "off" are indicated as "------".

Important

- For some elements, extreme settings may produce disagreeable results: the pitch may sound incorrect, or the element may become inaudible.
- You cannot set a note-shift value for elements whose Element Switch is "off". (→ REFERENCE: 1-17)

FYI

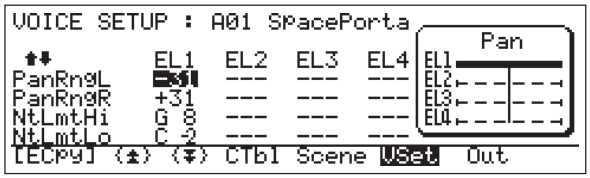
- If you set different values for the different elements of a voice, each key on the keyboard will produce a multipitched, chord-like sound.
- To alter pitch by smaller increments, use the Detune setting described on the preceding page.
- You can use the 1 ~ 4 buttons to switch among elements, and the 9 ~ 12 buttons to toggle elements on and off during editing.

VOICE SETUP: Pan Range

PLAY → F6 : VSet → Move cursor to PanRngL or PanRngR.

Sets the pan range for each element.

PanRngL	-31 ~ +31
PanRngR	-31 ~ +31

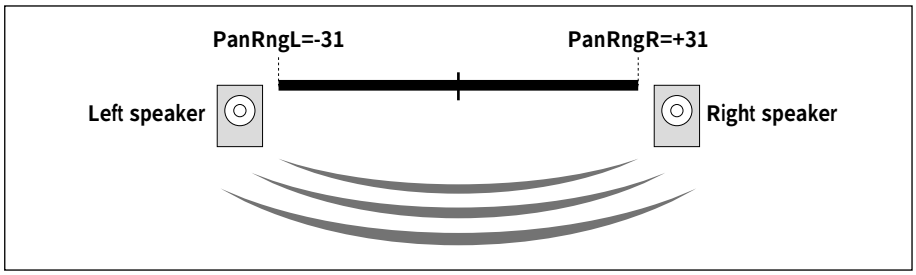


Description

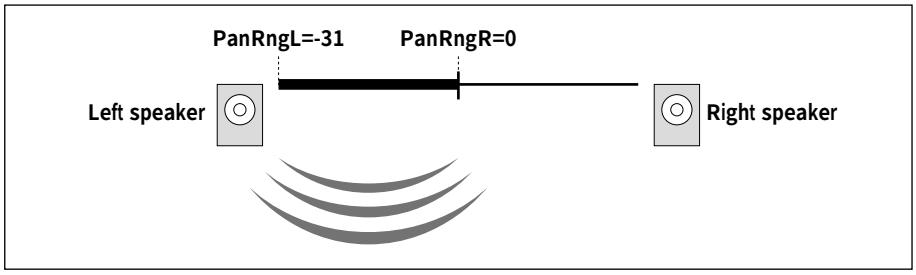
- Each element has a preset static or dynamic pan. Use the two Pan Range settings to adjust the range over which this pan acts.

- PanRngL: Sets positioning of left-channel output
- PanRngR: Sets positioning of right-channel output
- Positive values denote positions to the right; negative values denote positions to the left. The center position is “0”.

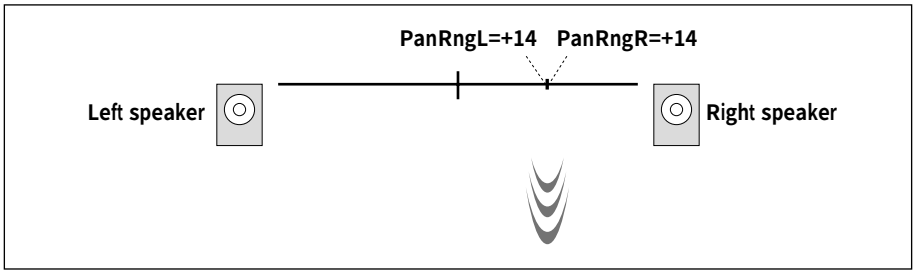
- The normal setting is: PanRngL = -31, PanRngR = 31. This setting reproduces the element’s preset pan without modification.



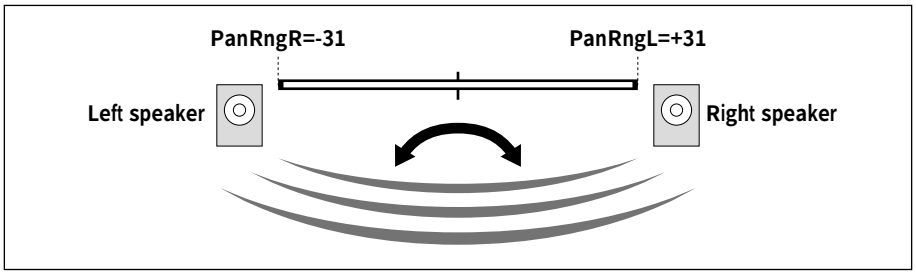
- Leaving PanRngL at -31 while changing PanRngR to 0 will shift the pan range to the left half of the field, as shown below.



- If you set PanRngL and PanRngR to equivalent values, the VP1 ignores the element's preset pan and positions the sound at the specified position, as shown.



- You can invert the preset pan by setting PanRngR to the left and PanRngL to the right.



- The window at the right of the screen displays the current pan-range settings graphically. Elements that are "off" are indicated as "------".

Important

- You cannot set the pan range for an element whose Element Switch is "off". (→ REFERENCE: 1-17)

FYI

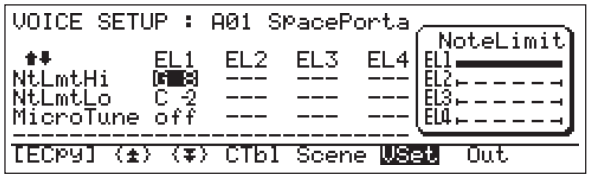
- Note that this function changes the range over which pan acts; it does not change the pan itself. Actual pan settings are built into each element and are not accessible for editing.
- You can use the 1 ~ 4 buttons to switch among elements, and the 9 ~ 12 buttons to toggle elements on and off during editing.

VOICE SETUP: Note Limit

PLAY → F6 : VSet → Move cursor to NtLmtHi or NtLmtLo.

Sets the keyboard range for each element.

NtLmtHi	C-2 ~ G8
NtLmtLo	C-2 ~ G8

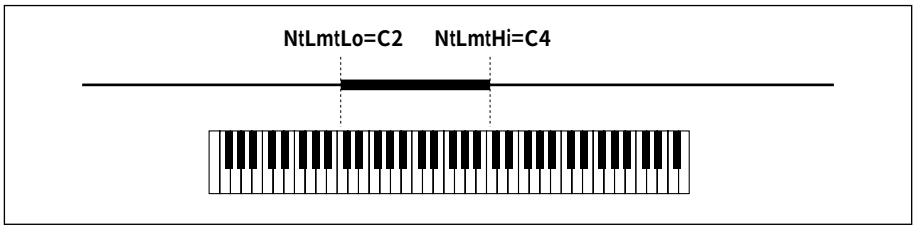


Description

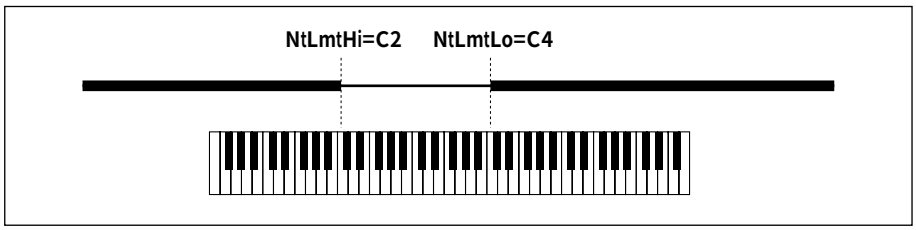
- Sets the range of notes over which an element can be played.

- NtLmtHi: Sets the highest note of the range.
- NtLmtLo: Sets the lowest note of the range.

- As an example, assume that NtLmtLo is set to C2 and NtLmtHi is set to C4. In this case, all notes from C2 to C4 will produce the sound of the element, while other notes will not.



- If you set NtLmtLo to a higher value than NtLmtHi, the notes between the two settings will not produce the element, while the other notes will. In other words, you get a gap in the middle where the element will not sound. If NtLmtHi is set to C2 and NtLmtLo to C4, for example, the element will be effective over notes C~2 ~ C2 and C4 ~ G8, but not between C#2 ~ B3.



- The window at the right of the screen displays the current range settings graphically. Elements that are “off” are indicated as “------”.

Important

- You cannot set the range on an element whose Element Switch is “off”. (→ REFERENCE: 1-17)

FYI

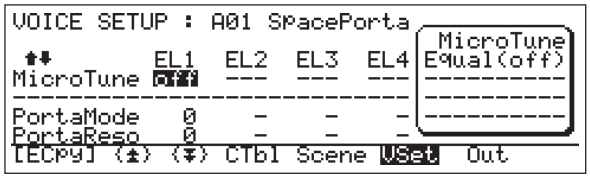
- The VP1’s keyboard runs from E0 to G6.
- You can use the 1 ~ 4 buttons to switch among elements, and the 9 ~ 12 buttons to toggle elements on and off during editing.

VOICE SETUP: Microtuning

PLAY → F6 : VSet → Move cursor to MicroTune.

Sets the type of tuning system applied to each element.

MicroTune	off, 01 ~ 56



Description

- Sets the type of tuning system applied to the element. Select any one of the types indicated below.

- off: Equal
  All 12 notes of the octave are equally spaced. You can play in any key with no adjustment required.

- 01 to 12: “Pure Major C” to “Pure Major B”
- 13 to 24: “Pure Minor A” to “Pure Minor A♭”
  Tuning for brass instruments. Notes are tuned for natural harmonics, ensuring that ensemble play is clean and free from discord. You must change the tuning pattern each time you change the key.

- 25 to 36: “Mean Tone C” to “Mean Tone B”
  Pythagorean-type tuning with corrected third.

- 37 to 48: “Pythagorean C” to “Pythagorean B”
  Classical Greek tuning system, later used in Rome, and then by Gregorian chanters and medieval minstrels.

- 49: Werckmeister
- 50: Kirnberger
- 51: Vallotti and Young
  In these classical systems, a single tuning pattern applies regardless of key, but chordal sounds tend to have more tension in keys with relatively many sharps or flats. These systems offer attractive melodic effects; key modulations have a large impact on the sound. These systems were employed in a fair number of important classical works.

- 52: 1/4 Shift
  Equal tuning, but with the pitch of each note raised 1/4-tone from its normal value. Playing a 1/4-shifted element in combination with an element tuned to “Equal” will produce an eerie, tension-filled sound.

- 53: 1/4 Tone
  Changes the spacing between adjacent notes from semitone to quarter-tone. Tuning is in reference to C2, which retains its normal pitch.

- 54: 1/8 Tone
  Changes the spacing between adjacent notes to one-eighth tone. Tuning is in reference to C2, which retains its normal pitch.

- 55, 56: Internal microtuning
  Microtuning is in accordance with tuning data included in the VP1 voice disk.

- The window at the right of the screen indicates the tuning pattern currently selected for each element. Elements that are "off" are indicated as "------".

Important

- Pitch calculations for some microtuning patterns are unstable, and may in some cases produce incorrect or inappropriate pitch output.
- You cannot set microtuning for an element whose Element Switch is "off". (→ REFERENCE: 1-17)

FYI

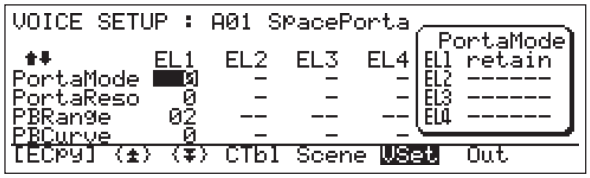
- Note "A" serves as the reference note for microtuning patterns 13 through 51. For these patterns, all A notes have the same pitch as they do under the "Equal" tuning pattern.
- You can use the [1] ~ [4] buttons to switch among elements, and the [9] ~ [12] buttons to toggle elements on and off during editing.

VOICE SETUP: Portamento Mode

PLAY → F6 : VSet → Move cursor to PortaMode.

Sets the portamento mode for each element.

PortaMede	If MaxNotes = 1, then
	0: fingered, 1: fulltime
	If MaxNotes > 1, then
	0: retain [fixed setting]



Description

- Sets the portamento mode for each element. “Portamento” denotes the pitch-slide effect that occurs between sequentially played notes.

- If MaxNotes is set to 1 (monophonic), you can select between “fingered” and “fulltime” portamento, as described below. If MaxNotes is set to 2 or above (polyphonic), the VP1 automatically sets portamento to “0: retain” — meaning that portamento will always be applied.

- 0: fingered
  Portamento between sequentially played notes occurs only if you hit the second note while still holding down the first note. (The portamento switch has no effect.)

- 1: fulltime
  Portamento is always applied.

- The window at the right of the screen indicates the current portamento mode setting for each element. If the element is “off”, the setting is listed as “------”.

Important

- The VP1 does not apply portamento if Quick Edit “POR TIME” is set to zero. (→ BASICS: 3-18)
- You cannot set the portamento mode for an element whose Element Switch is “off”. (→ REFERENCE: 1-17)
- If you have not connected the portamento switch, the switch is considered to be set ON and the Quick Edit “POR TIME” setting determines the effect. (→ BASICS: 3-18)

FYI

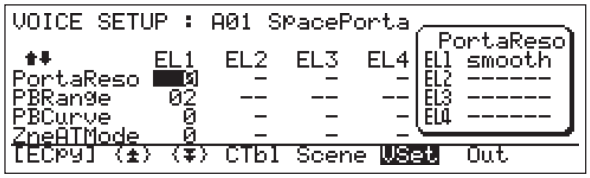
- Use the Portamento Resolution setting to set the smoothness of the portamento slide. For details, refer to the next page.
- You can use the 1 ~ 4 buttons to switch among elements, and the 9 ~ 12 buttons to toggle elements on and off during editing.

VOICE SETUP: Portamento Resolution

PLAY → F6 : VSet → Move cursor to PortaReso.

Sets the resolution of the portamento slide.

PortaReso	0: smooth, 1: 50cent 2: 100cent, 3: 200cent 4: 400cent



Description

- Selects the resolution (smoothness) of the portamento slide.

- 0: smooth
  Pitch slide is continuous.
- 1: 50cent
  The pitch changes in quarter-tone increments.
- 2: 100cent
  The pitch changes in semitone (minor second) increments.
- 3: 200cent
  The pitch changes in full note (major second) increments.
- 4: 400cent
  The pitch changes in two-note (major third) increments.

- The window at the right of the screen indicates the current resolution setting for each element. If the element is “off”, the setting is listed as “------”.

Important

- The VP1 does not apply portamento if Quick Edit “POR TIME” is set to zero. (→ BASICS: 3-18)
- You cannot set the resolution for an element whose Element Switch is “off”. (→ REFERENCE: 1-17)
- The “smooth” setting utilizes a different curve and speed than the other, incremental settings.

FYI

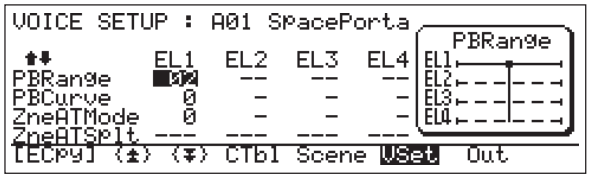
- You can use the 1 ~ 4 buttons to switch among elements, and the 9 ~ 12 buttons to toggle elements on and off during editing.

VOICE SETUP: PB Range

PLAY → F6 : VSet → Move cursor to PBRange.

Sets the pitch-bend range for each element.

PBRange	0 ~ 48



Description

- Sets the maximum amount that pitch can bend in either direction in response to the action of the PITCH wheel. The setting is in semitone units.
- The maximum setting of 48 allows you to bend the pitch by up to four octaves in either direction — for a total range of eight octaves.
- The window at the right of the screen displays the current settings graphically. Elements that are "off" are indicated as "------".

Important

- If you have set the PBCurve (see next page) to 5, 6, or 7, you will not be able to bend the pitch upward by the full amount permitted by the PBRange setting.
- You cannot set the pitch-bend range for an element whose Element Switch is "off". (→ REFERENCE: 1-17)

FYI

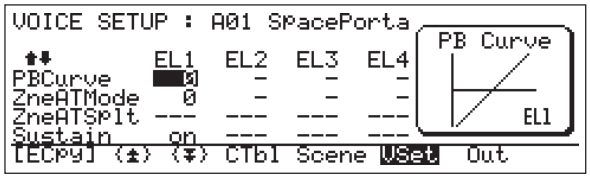
- The PBCurve setting determines the relationship between wheel rotation and pitch change. Refer to the next page.
- You can use the 1 ~ 4 buttons to switch among elements, and the 9 ~ 12 buttons to toggle elements on and off during editing.

VOICE SETUP: PB Curve

PLAY → F6 : VSet → Move cursor to PBCurve.

Sets the pitch-bend characteristics for each element.

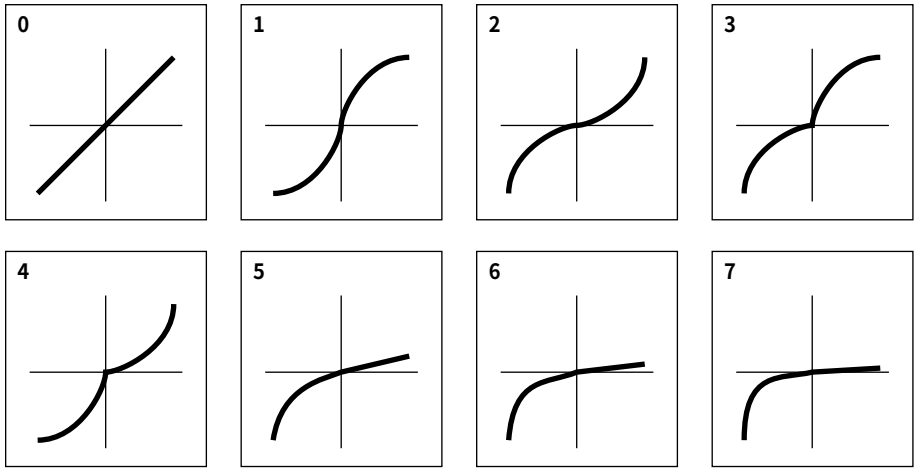
PBCurve	0 ~ 7



Description

- The "curve" setting determines how the pitch changes in relation to PITCH-wheel rotation. Available settings are illustrated and described below.

Horizontal axis represents deflection of PITCH wheel; vertical axis shows corresponding pitch change.



- 0: Pitch changes in direct proportion to PITCH-wheel deflection.
- 1: Pitch changes faster over the middle range of PITCH-wheel deflection.
- 2: Pitch changes faster over the outer ranges of PITCH-wheel deflection.
- 3: In the upward direction, the pitch change rate slows as the wheel's deflection increases; in the downward direction, the rate increases as deflection increases. Changing the deflection simulates the effect of changing the string tension.
- 4: In the upward direction, the pitch change rate increases as the wheel's deflection increases; in the downward direction, the rate decreases as deflection increases. Changing the deflection simulates the effect of changing the string length.
- 5: Pitch change in the upward direction is restricted to one-sixth the PBRange setting. Change in the downward direction is according to Curve 5 above.
- 6: Pitch change in the upward direction is restricted to one-twelfth the PBRange setting. Change in the downward direction is according to Curve 6 above.
- 7: Pitch change in the upward direction is restricted to one twenty-fourth the PBRange setting. Change in the downward direction is according to Curve 7 above.

- The window at the right of the screen displays the current settings graphically. Elements that are "off" are indicated as "------".

Important

- If PBCurve is set to 5, 6, or 7, pitch movement in the upward direction is limited to a small fraction of the range established by the PBRange setting.
- You cannot set the PBCurve of an element whose Element Switch is “off”. (→ REFERENCE: 1-17)

FYI

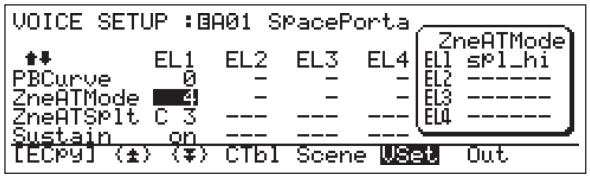
- You can use the [1] ~ [4] buttons to switch among elements, and the [9] ~ [12] buttons to toggle elements on and off during editing.

VOICE SETUP: Zoned Aftertouch Mode

PLAY → F6 : VSet → Move cursor to ZneATMode.

Sets the aftertouch mode for each element.

ZneATMode	0: all, 1: top, 2: bottom 3: mid, 4: spl_hi 5: spl_lo



Description

- Use this setting to select the way the VP1 applies received aftertouch data. Available selections are as follows.

- 0: all
  Aftertouch effect applies to all notes.
- 1: top
  Aftertouch effect applies to the highest note only.
- 2: bottom
  Aftertouch effect applies to the lowest note only.
- 3: mid
  Aftertouch effect applies to all except the lowest and highest notes. No effect is applied unless at least three notes are being played.
- 4: spl_hi
  Aftertouch effect applies only at or above the split-point. (See next page.)
- 5: spl_lo
  Aftertouch effect applies only at or below the split-point. (See next page.)

- The window at the right of the screen indicates the current setting for each element. Elements that are “off” are indicated as “------”.

Important

- Aftertouch data from the keyboard is output as channel pressure.
- If you select spl_lo or spl_hi (setting 4 or 5), you must also select the split-point. For details, refer to the next page.
- You cannot make this setting for an element whose Element Switch is “off”. (→ REFERENCE: 1-17)

FYI

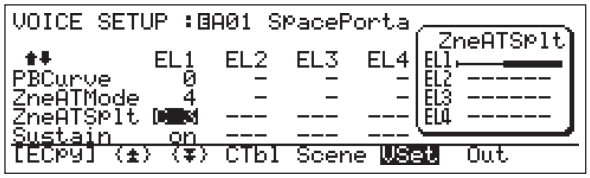
- You can use the 1 ~ 4 buttons to switch among elements, and the 9 ~ 12 buttons to toggle elements on and off during editing.

VOICE SETUP: Zoned Aftertouch Split

PLAY → F6 : VSet → Move cursor to ZneATSplit.

Sets the split point for zoned aftertouch.

ZneATSplt	C-2 ~ G8



Description

- Selects the split-point used when zoned aftertouch mode (ZneATMode) is set to "4:spl_hi" or "5:spl_lo". (See preceding page.)
- If ZneATMode is set to "spl_hi", the VP1 applies aftertouch effect only to notes from the split-point up.
- If ZneATMode is set to "spl_lo", the VP1 applies aftertouch effect only to notes from the split-point down.
- The window at the right of the display graphically indicates the range of notes subject to aftertouch effects. Elements that are "off" are indicated as "------".

Important

- The VP1 will not allow you to make this setting unless you have already set ZneATMode to "spl_hi" or "spl_lo".

FYI

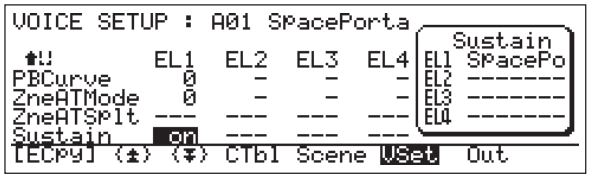
- You can use the 1 ~ 4 buttons to switch among elements, and the 9 ~ 12 buttons to toggle elements on and off during editing.

VOICE SETUP: Sustain

PLAY → F6 : VSet → Move cursor to Sustain.

Enables or disables Sustain-switch operation for each element.

Sustain	off, on



Description

- This setting determines whether the Sustain switch produces a sustain effect. Each element is set independently.
- If the setting is “off”, the VP1 ignores the operation of the sustain switch. If the setting is “on”, depressing the sustain switch (footswitch) produces the normal sustain effect.
- The window at the right of the screen lists the names of the elements that are switched on. Elements that are “off” are listed as “------”.

Important

- You cannot make this setting for an element whose Element Switch is “off”. (→ REFERENCE: 1-17)

FYI

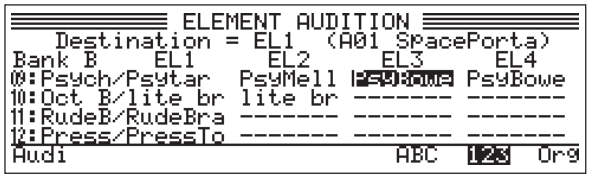
- You can use the 1 ~ 4 buttons to switch among elements, and the 9 ~ 12 buttons to toggle elements on and off during editing.

VOICE SETUP: Element Copy

PLAY → F6 : VSet → F1 : [ECpy]

Copies an element from any voice to the element indicated by the cursor in the preceding VOICE SETUP screen.

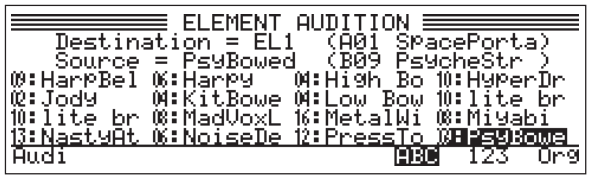
Copy source	Any element (1 ~ 4) from any voice (A01 ~ D16)



Description

- This function copies the element marked by the cursor, along with some of the element's VOICE SETUP settings, to the element that was marked by the cursor in the preceding VOICE SETUP screen.

- Press F6 :ABC to display the element list in alphabetic order. Press F7 :123 to return the list to its original sequence (by order of voice number).



- Press F1 :Audi (Audition) to hear how the result of the copy will sound. The word "Audi" on the LCD begins blinking, indicating that you can play the keyboard to test the sound. If you do not like the sound, you need not complete the copy.

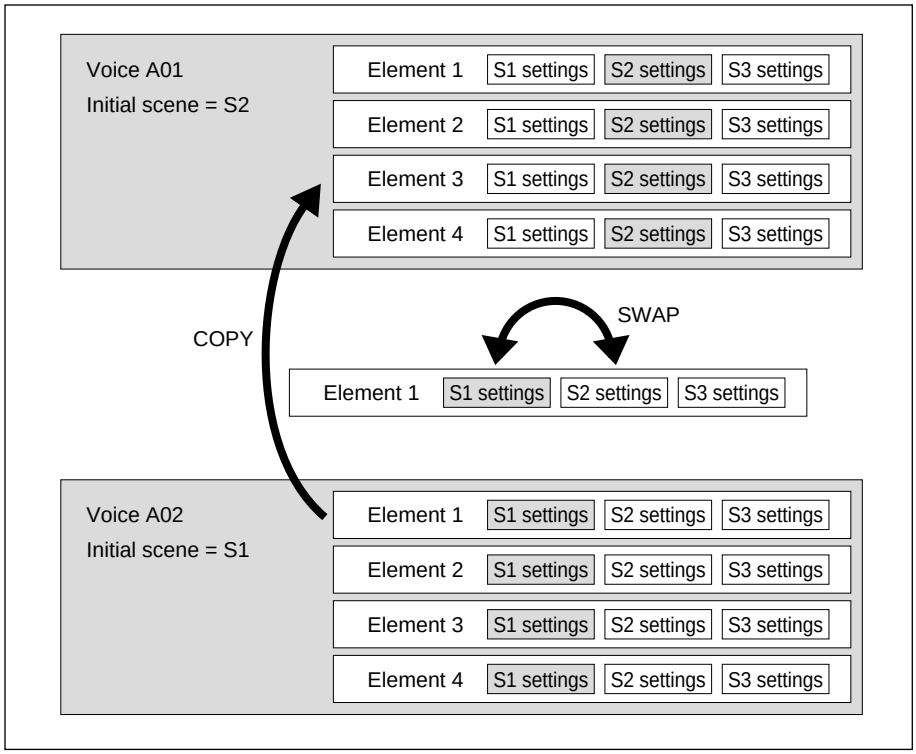
- Once you have pressed F1 :Audi, you can press F8 :Org to toggle between the sound of the original destination voice and the sound the voice will have after copying. The word "Org" flashes to indicate that the VP1 is set to produce the original sound.

- When you copy an element between source and destination voices that have different initial scenes, the SYSTEM mode's "Scene Copy Mode" parameter (→ REFERENCE 2-13) determines how the VP1 resolves the difference. Remember that the voice's "initial scene" is the scene that the VP1 automatically selects when you first switch into the voice — for each voice, you can set this to S1, S2, or S3. Also remember that each element stores three separate sets of scene data — S1 data, S2 data, and S3 data.

  If "Scene Copy Mode" is set to "swap", the VP1 swaps the scene data such that the scene data in the source side's initial scene moves into the destination side's initial scene. For example, assume that the source voice's initial scene is S1, while the destination voice's initial scene is S2. In this case, the VP1 will switch the element's S1 and S2 data when making the copy. This means that the initial-scene data on the destination side, stored in S2, will be the same as the initial-scene data on the source side, which was stored in S1. The figure on the next page illustrates the idea.

If Scene Copy Mode is set to “no swap”, the VP1 copies the element without swapping the scene data.

If Scene Copy Mode is set to “confirm”, the VP1 prompts you to select between “swap” and “no swap” before making the copy.



Concept of Swapping

- Here is a typical case in which you might want to use the “swap” option. Assume that the destination voice consists of a single element (element 1), that the voice’s initial scene is set to Scene 2, and that the element’s scenes are set up as follows.

  Scene 1: LFO set for extreme oscillation
  Scene 2: Normal sound (initial scene)
  Scene 3: Low-mid range cut off; faint sound

  Now assume that the element you want to copy has its scenes set up as follows, and that it belongs to a voice whose initial scene is set to Scene 1.

  Scene 1: Normal sound (initial scene)
  Scene 2: LFO set for extreme oscillation
  Scene 3: Extremely low, droning sound

  If you copy the above element into Element 2 of the destination voice using “no swap”, the resulting scene arrangement will probably be inappropriate. The destination voice’s initial scene (Scene 2) will produce a normal sound for Element 1, but an unusual oscillating sound for Element 2. If you execute a “swap”, however, the initial scene (Scene 2) will produce a normal sound for both elements, while Scene 1 will produce an oscillating sound for both elements. (→ REFERENCE: 2-13)

Procedure

1. **Check that the Element Switch for the destination element is "on".**
   If the setting is "off", change it.

2. **If the source voice is in a different bank, press the appropriate bank button (** A **~** D **).**

3. **Move the cursor to the element that you want to copy. You can move the cursor using the dial, the cursor buttons (◁△▽▷), the program buttons (** 1 **~** 16 **), or the** INC/YES **and** DEC/NO **buttons.**
   You can use the F6 :ABC and F7 :123 functions to switch the order of the listing (alphabetic ↔ numerical). If you want to audition the sound that the copy operation will produce, proceed to Step 4 below. If you want to skip the audition stage, jump to Step 5.

4. **Press** F1 **:Audi.**
   If the source and destination voices have different initial scenes and the SYSTEM mode's "Scene Copy Mode" is set to "confirm", the LCD displays a message asking whether you want to swap the element's scene data. If you see this message, press INC/YES to swap data, or DEC/NO to leave scene data unchanged.

   The LCD displays the "Now executing!" message while the VP1 sets up for the audition. When setup is completed, the word "Audi" begins flashing. You can now play on the keyboard to "audition" the sound that the destination voice will have after the copy is complete.

   While "Audi" is flashing, you can press F8 :Org to change back and forth between the new sound and the destination voice's original sound. (The word "Org" on the display flashes to indicate that you are hearing the original sound.) This allows you to compare the sound of the original voice with the sound that the voice will have after you complete the copy.

5. **Press** ENTER **to proceed.**
   If you prefer to cancel the operation, press EXIT to return to the original ELEMENT AUDITION screen.
   ▼ When you press ENTER, the screen displays the "Are you sure?" query.

6. **Press** INC/YES **to execute the copy.**
   ▼ (If you do not want to proceed, press DEC/NO or EXIT to return to Step 4 above.)

FYI

- You can skip the audition step (Step 4) and press ENTER immediately after selecting the source element. If you do so, the LCD will first display the "Are you sure?" query. If the source and destination voices have different initial scenes and the SYSTEM mode's "Scene Copy Mode" is set to "confirm", the LCD will then display a message asking whether you want to swap the element's scene data.

- When the VP1 copies the element, it also copies the values of all the parameters listed beneath the dotted line in the VOICE SETUP display (all parameters from PortaMode down). If MaxNotes is set to 1, then this setting is also copied.

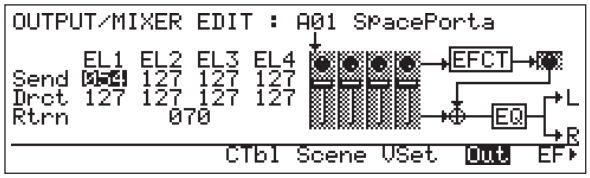
- You can use the 9 ~ 12 buttons to toggle elements on and off during editing.

OUTPUT/MIXER

PLAY → F7 : Out

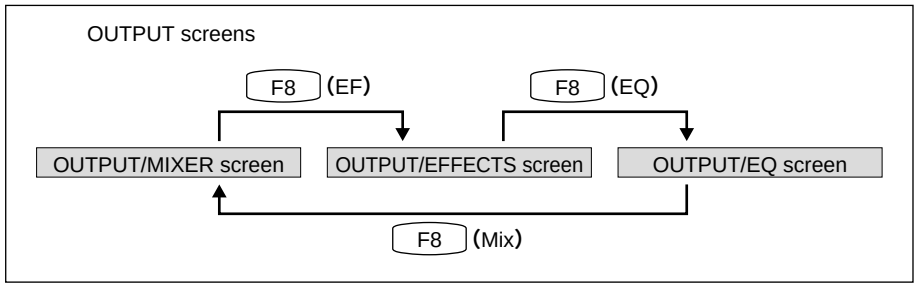
Sets levels for send-to-effects, direct-output, and return-from-effects signals.

Send (EL1 ~ EL4)	0 ~ 127
Drct (EL1 ~ EL4)	0 ~ 127
Rtrn	0 ~ 127



Description

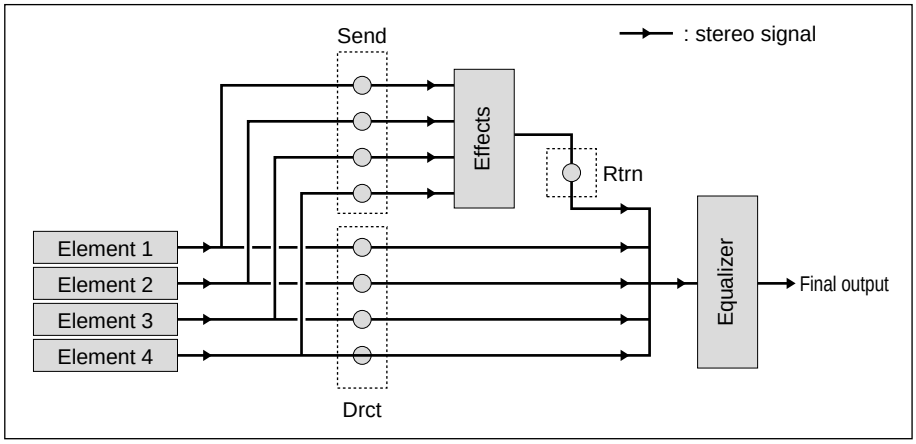
- This function sets the direct-output and send-to-effects levels for each element. It also sets the voice's return-from-effects level.
- This function also serves as the gateway to the OUTPUT/EFFECT PARAMETER and OUTPUT/EQ EDIT screens, which you use to set the effects parameters and the equalizer. The calling relationship between the three screens is illustrated below.



- Send: Sets the level for each element's send-to-effects signal — the signal going into the effects block. The "knobs" along the top of the displayed graphic reflect the current settings.

- Drct: Sets the level for each element's direct-output signal. This signal bypasses the effects block and moves directly to the equalizer. The "sliders" in the displayed graphic reflect the current settings.

- Rtrn: Sets the level for the return-from-effects signal — the signal returning from the effects block. The "knob" at the right of the graphic reflects the current setting.



- Press [F8] :EF to advance to the effects-setting screen. (Refer to the next page.)

- Press [EXIT] or [PLAY] to return to the main PLAY-mode screen.
- To switch to another PLAY-mode function, press [F4], [F5], or [F6].

Important

- These settings do not affect the signals to the ELEMENT outputs.
- It is recommended that you set "Drct" to 0 when using the Stereo Flanger or Aural Exciter® sound effect (effects 22 and 29; see next page) so as to avoid phase cancellation caused by slight phase differences between direct and effects-processed outputs.

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FYI

- To adjust the output level to the ELEMENT jacks, use the VOICE SETUP function's "Volume" parameter. (→ REFERENCE: 1-22)

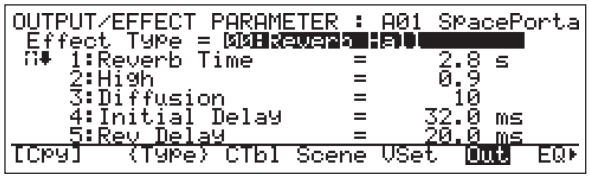
- You can use the [1] ~ [4] buttons to switch among elements, and the [9] ~ [12] buttons to toggle elements on and off during editing.

OUTPUT/EFFECT

PLAY → F7 : Out → F8 : EF

Selects the effects and sets their parameters.

Effect Type	0 ~ 31
Parameter vary ; see below.	



Description

- Use this function to select the effects you want to use, and to set the parameter values for the selected effects.
- You can select from the following effects.

00:	Reverb Hall	12:	Early Ref. 2	24:	Stereo Chorus
01:	Rev Room 1	13:	Gate Reverb	25:	Symphonic
02:	Rev Room 2	14:	Reverse Gate	26:	Stereo Symphonic
03:	Rev Room 3	15:	Delay L, R	27:	Phaser
04:	Rev Stage 1	16:	Delay L, C, R	28:	Stereo Phaser
05:	Rev Stage 2	17:	Stereo Echo	29:	Aural Exciter®
06:	Rev Plate	18:	Pitch Change 1	30:	Rotary Speaker
07:	Rev White Room	19:	Pitch Change 2	31:	Ring Modulator
08:	Rev Tunnel	20:	Pitch Change 3		
09:	Rev Canyon	21:	Flanger		
10:	Rev Basement	22:	Stereo Flanger		
11:	Early Ref. 1	23:	Chorus		

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- Parameters vary for different effects. Refer to the following pages for a description of effects and parameter settings.

- You can use the F1 :[Cpy] function to copy effects and effect parameters from a different voice into the voice you are currently editing. (→ REFERENCE: 1-50)
- Press F3 :{Type} to move the cursor to the “Effect Type” line.
- Press F8 :EQ to advance to the equalizer setup screen. (→ REFERENCE: 1-51)

- Press EXIT or PLAY to return to the main PLAY-mode screen.
- To switch to another PLAY-mode function, press F4 , F5 , or F6 .

Important

- Effects are not applied to the ELEMENT output signals.

FYI

- You can use the 9 ~ 12 buttons to toggle elements on and off during editing.

Effect Types

Effect		Characteristics
00	Reverb Hall	Simulates acoustics of large concert hall
01	Reverb Room 1	Simulates acoustics of variously sized rooms
02	Reverb Room 2	
03	Reverb Room 3	
04	Reverb Stage 1	Light, mild reverberation
05	Reverb Stage 2	
06	Reverb Plate	Steel-plate echo; hard reverberation effect
07	Reverb White Room	Reverb effect; allows you to set the dimensions of the “room”
08	Reverb Tunnel	Tunnel reverberation. You can set the dimensions.
09	Reverb Canyon	Reverberation of large canyon. You can set the dimensions.
10	Reverb Basement	Reverberation of underground room. You can set the dimensions.
11	Early Reflection 1	Low-density reverb effect; uses only the initial echoes
12	Early Refkection 2	High-density reverb effect; uses only the initial echoes
13	Gate Reverb	Reverb plus gate; unusual effect
14	Reverse Gate	Reverse reverb; gets louder rather than softer
15	Delay L, R	Delay effect; 2 channels (left and right)
16	Delay L, C, R	Delay effect; 3 channels (left, right, and center)
17	Stereo Echo	Feedback echo; independent settings for left and right channels
18	Pitch Change 1	Two-stage pitch change effect
19	Pitch Change 2	Pitch change effect; separate settings for left and right channels
20	Pitch Change 3	Three-stage pitch change effect
21	Flanger	Dynamic modulation of echo delay. Separate modulation settings for L and R channels. (Monaural input)
22	Stereo Flanger	Dynamic modulation of echo; stereo input. You can set echo delay and phase modulation separately for L and R channels.
23	Chorus	Multiple echoes with slightly skewed delays. Delays and signal amplitudes are modulated. (Monaural input)
24	Stereo Chorus	Similar to Chorus effect described above, but operates on stereo input. You can set delay and amplitude modulations separately for L and R channels.
25	Symphonic	Similar to “Chorus,” but with greater multiplication effect (Monaural input)
26	Stereo Symphonic	Same as “Symphonic,” except that delay modulation is applied separately to each of the stereo inputs.
27	Phaser	Passes sound through multiple stages of a phase modulator, producing a diffusive, depth-like effect. (Monaural input)
28	Stereo Phaser	Same as “Phaser,” except that you can set separate phase modulations for L and R. (Stereo input)
29	Aural Exciter ®	Adds new harmonic overtones to the input signal, producing a distinctive emphatic sound.
30	Rotary Speaker	Simulates the sound of a rotary speaker. Effective for organ and related voices.
31	Ring Modulator	Produces new harmonics by multiplying the input signal with an internal oscillation signal. You can use this to create a bell-like sound.

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Effects Parameters

■ 00: Reverb Hall 01: Reverb Room 1 02: Reverb Room 2 03: Reverb Room 3 04: Reverb Stage 1 05: Reverb Stage 2 06: Reverb Plate

No.	Parameter Name	Allowable Range	Description
01	Reverb Time	0.3 ~ 30.0 sec	Reverb attenuation time
02	High	0.1 ~ 1.0	High-range attenuation rate
03	Diffusion	0 ~ 10	Reverb diffusion
04	Initial Delay	0.1 ~ 200.0 ms	Interval before early reflection
05	Rev Delay	0.1 ~ 200.0 ms	Reverb delay
06	Density	0 ~ 4	Reverb density
07	ER/Rev Balance	0 ~ 100 %	Balance between early reflection and reverb
08	Low Gain	-12 ~ +12 dB	Low-range gain
09	High Gain	-12 ~ +12dB	High-range gain
10	LPF	1.0 ~ 16.0 kHz, thru	Frequency for low-pass filter

■ 07: Reverb White Room 08: Reverb Tunnel 09: Reverb Canyon 10: Reverb Basement

No.	Parameter Name	Allowable Range	Description
01	Reverb Time	0.3 ~ 30.0 sec	Reverb attenuation time
02	High	0.1 ~ 1.0	High-range attenuation rate
03	Diffusion	0 ~ 10	Reverb diffusion
04	Initial Delay	0.1 ~ 200.0 ms	Interval before early reflection
05	Width	0.5 ~ 30.2 ms	Width of space
06	Height	0.5 ~ 30.2 ms	Height of space
07	Depth	0.5 ~ 30.2 ms	Depth of space
08	Wall Vary	0 ~ 30	Wall reflection rate
09	HPF	thru, 32 ~ 1000 Hz	Frequency for high-pass filter
10	LPF	1.0 ~ 16.0 kHz, thru	Frequency for low-pass filter

■ 11: Early Reflection 1 12: Early Reflection 2

No.	Parameter Name	Allowable Range	Description
01	Type	S-Hall, L-Hall Random, Reverse, Plate, Spring	Early reflection pattern
02	Room Size	0.1 ~ 20.0	Size of space
03	Liveness	0 ~ 10	Reflection rate
04	Diffusion	0 ~ 10	Reverb diffusion
05	Intial Delay	0.1 ~ 400.0 ms	Interval before early reflection
06	ER Number	1 ~ 19	Number of early reflections
07	Feedback Delay	0.1 ~ 800.0 ms	Interval before feedback
08	Feedback Gain	-99 ~ +99 %	Feedback rate
09	HPF	thru, 32 ~ 1000 Hz	Frequency for high-pass filter
10	LPF	1.0 ~ 16.0 kHz, thru	Frequency for low-pass filter

■ 13: Gate Reverb　　14: Reverse Gate

No.	Parameter Name	Allowable Range	Description
01	Type	A, B	Early reflection pattern
02	Room Size	0.1 ~ 20.0	Size of space
03	Liveness	0 ~ 10	Reflection rate
04	Diffusion	0 ~ 10	Reverb diffusion
05	Initial Delay	0.1 ~ 400.0 ms	Interval before early reflection
06	ER Number	1 ~ 19	Number of early reflections
07	Feedback Delay	0.1 ~ 800.0 ms	Interval before feedback
08	Feedback Gain	-99 ~ +99 %	Feedback rate
09	HPF	thru, 32 ~ 1000 Hz	Frequency for high-pass filter
10	LPF	1.0 ~ 16.0 kHz, thru	Frequency for low-pass filter

■ 15: Delay L,R

No.	Parameter Name	Allowable Range	Description
01	Lch Delay Time	0.1 ~ 1360.0 ms	Delay for left channel
02	Rch Delay Time	0.1 ~ 1360.0 ms	Delay for right channel
03	FB1 Delay Time	0.1 ~ 1360.0 ms	Feedback-1 delay
04	FB2 Delay Time	0.1 ~ 1360.0 ms	Feedback-2 delay
05	FB Gain	-99 ~ +99 %	Feedback level
06	FB1 High control	0.1 ~ 1.0	High-range characteristics for Feedback 1
07	FB2 High control	0.1 ~ 1.0	High-range characteristics for Feedback 2
08	HPF	thru, 32 ~ 1000 Hz	Frequency for high-pass filter
09	LPF	1.0 ~ 16.0 kHz, thru	Frequency for low-pass filter

■ 16: Delay L,C,R

No.	Parameter Name	Allowable Range	Description
01	Lch Delay Time	0.1 ~ 1360.0 ms	Delay for left channel
02	Rch Delay Time	0.1 ~ 1360.0 ms	Delay for right channel
03	Cntr Delay Time	0.1 ~ 1360.0 ms	Delay for center channel
04	FB1 Delay Time	0.1 ~ 1360.0 ms	Feedback-1 delay
05	FB2 Delay Time	0.1 ~ 1360.0 ms	Feedback-2 delay
06	FB Gain	-99 ~ +99 %	Feedback level
07	FB1 High control	0.1 ~ 1.0	High-range characteristics for Feedback 1
08	FB2 High control	0.1 ~ 1.0	High-range characteristics for Feedback 2
09	HPF	thru, 32 ~ 1000 Hz	Frequency for high-pass filter
10	LPF	1.0 ~ 16.0 kHz, thru	Frequency for low-pass filter

■ 17: Stereo

No.	Parameter Name	Allowable Range	Description
01	Lch Init Dly Time	0.1 ~ 680.0 ms	Delay for left-channel initial output
02	Lch FB Dly Time	0.1 ~ 680.0 ms	Delay for left-channel feedback
03	Lch FB Gain	-99 ~ +99 %	Left channel's feedback level
04	Rch Init Dly Time	0.1 ~ 680.0 ms	Delay for right-channel initial output
05	Rch FB Dly Time	0.1 ~ 680.0 ms	Delay for right-channel feedback
06	Rch FB Gain	-99 ~ +99 %	Right channel's feedback level
07	Lch FB High con.	0.1 ~ 1.0	High-range characteristics for left-channel feedback
08	Rch FB High con.	0.1 ~ 1.0	High-range characteristics for right-channel feedback
09	HPF	thru, 32 ~ 1000 Hz	Frequency for high-pass filter
10	LPF	1.0 ~ 16.0 kHz, thru	Frequency for low-pass filter

■ 18: Pitch Change 1

No.	Parameter Name	Allowable Range	Description
01	1 Pitch	-24 ~ +24	Semitones for pitch change #1
02	1 Fine	-100 ~ +100	Fine adjustment of pitch change #1
03	1 Delay	0.1 ~ 650.0 ms	Effect delay for pitch change #1
04	1 FB Gain	-99 ~ +99 %	Feedback level, pitch change #1
05	1 Level	0 ~ 100 %	Effect level, pitch change #1
06	2 Pitch	-24 ~ +24	Semitones for pitch change #2
07	2 Fine	-100 ~ +100	Fine adjustment of pitch change #2
08	2 Delay	0.1 ~ 650.0 ms	Effect delay for pitch change #2
09	2 FB Gain	-99 ~ +99 %	Feedback level, pitch change #2
10	2 Level	0 ~ 100 %	Effect level for Pitch Change #2

■ 19: Pitch Change 2

No.	Parameter Name	Allowable Range	Description
01	L pitch	-24 ~ +24	Semitones of pitch change for left channel
02	L Fine	-100 ~ +100	Fine adjustment of pitch change for left channel
03	L Delay	0.1 ~ 650.0 ms	Effects delay for left channel
04	L FB Gain	-99 ~ +99 %	Feedback level for left channel
05	R Pitch	-24 ~ +24	Semitones of pitch change for right channel
06	R Fine	-100 ~ +100	Fine adjustment of pitch change for right channel
07	R Delay	0.1 ~ 650.0 ms	Effects delay for right channel
08	R FB Gain	-99 ~ +99 %	Feedback level for right channel

■ 20: Pitch Change 3

No.	Parameter Name	Allowable Range	Description
01	1 Pitch	-24 ~ +24	Semitones for pitch change #1
02	1 Fine	-100 ~ +100	Fine adjustment of pitch change #1
03	1 Delay	0.1 ~ 1300.0 ms	Effect delay for pitch change #1
04	2 Pitch	-24 ~ +24	Semitones for pitch change #2
05	2 Fine	-100 ~ +100	Fine adjustment of pitch change #2
06	2 Delay	0.1 ~ 1300.0 ms	Effect delay for pitch change #2
07	3 Pitch	-24 ~ +24	Semitones for pitch change #3
08	3 Fine	-100 ~ +100	Fine adjustment for pitch change #3
09	3 Delay	0.1 ~ 1300.0 ms	Effect delay for pitch change #3

■ 21: Flanger

No.	Parameter Name	Allowable Range	Description
01	Modulation Freq.	0.05 ~ 40.0 Hz	Modulation speed
02	Modulation Depth	0 ~ 100 %	Modulation depth
03	Modulation Delay	0.1 ~ 100.0 ms	Modulation delay
04	Mod. FB Gain	0 ~ 99 %	Modulation feedback gain

■ 22: Stereo Flanger

No.	Parameter Name	Allowable Range	Description
01	Modulation Freq.	0.05 ~ 40.0 Hz	Modulation speed
02	Modulation Depth	0 ~ 100 %	Modulation depth
03	Lch Mod. Delay	0.1 ~ 100.0 ms	Left channel's modulation delay
04	Lch FB Gain	0 ~ 99 %	Left channel's modulation feedback gain
05	Lch Phase	0 ~ 330 deg	Left channel's modulation phase
06	Rch Mod. Delay	0.1 ~ 100.0 ms	Right channel's modulation delay
07	Rch FB Gain	0 ~ 99 %	Right channel's modulation feedback gain
08	Rch Phase	0 ~ 330 deg	Right channel's modulation phase

■ 23: Chorus, 24: Stereo Chorus

No.	Parameter Name	Allowable Range	Description
01	Modulation Freq.	0.05 ~ 40.0 Hz	Modulation speed
02	PM Depth	0 ~ 100 %	Pitch modulation depth
03	AM Depth	0 ~ 100 %	Amplitude modulation depth

■ 25: Symphonic, 26: Stereo Symphonic

No.	Parameter Name	Allowable Range	Description
01	Modulation Freq.	0.05 ~ 40.0 Hz	Modulation speed
02	Modulation Depth	0 ~ 100 %	Modulation depth

■ 27: Phaser

No.	Parameter Name	Allowable Range	Description
01	LFO Freq.	0.05 ~ 40.0 Hz	Modulation speed
02	LFO Depth	0 ~ 100 %	Modulation depth
03	FB Gain	-99 ~ +99 %	Feedback gain
04	Stage Number	4, 8, 12	Number of phase modulators
05	Diffusion	Stereo, Mono	Stereo or mono

■ 28: Stereo Phaser

No.	Parameter Name	Allowable Range	Description
01	LFO Freq.	0.05 ~ 40.0 Hz	Modulation speed
02	LFO Depth	0 ~ 100 %	Modulation depth
03	Lch FB Gain	-99 ~ +99 %	Left channel's feedback gain
04	Lch LFO Phase	0 ~ 330°	Left channel's phase
05	Rch FB Gain	-99 ~ +99 %	Right channel's feedback gain
06	Rch LFO Phase	0 ~ 330°	Right channel's phase
07	Stage Number	4, 8, 12	Number of phase modulators

■ 29: Aural Exciter®

No.	Parameter Name	Allowable Range	Description
01	HPF	500 Hz ~ 16.0 kHz	Frequency for high-pass filter
02	Enhance	0 ~ 100 %	Emphasis level
03	Mix Level	0 ~ 100 %	Percentage effect relative to normal sound
04	Delay Time	0.1 ~ 650.0 ms	Delay

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■ 30: Rotary Speaker

No.	Parameter Name	Allowable Range	Description
01	Mid Speed	0.05 ~ 40.0 Hz	Middle rotation speed
02	Depth	0 ~ 100 %	Effect depth
03	Transition Time	2 ~ 22000 ms	Transition time between low, middle, high
04	L/M/H Speed Diff	0.05 ~ 5.80 Hz	Difference between low, middle, and high rotation speeds
05	Switch L/M/H	Low, Mid, High	Rotation-speed select
06	Low Gain	-12 ~ +12 dB	Low-range gain
07	High Gain	-12 ~ +12 dB	High-range gain
08	Ctrl Device	MW1 ~ PB, off	Rotation-speed controller
09	Ctrl Mode	L->M->H ~ M->L	Relation of controller movement to speed change
10	Ctrl Mid Range	Narrow, Norm, Wide	Controller range corresponding to middle speed

■ 31: Rotary Speaker

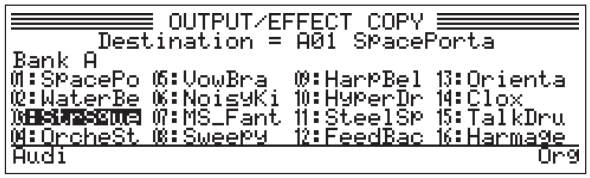
No.	Parameter Name	Allowable Range	Description
01	Wave PM Depth	0 ~ 100 %	Pitch modulation depth
02	Wave PM Freq.	0.05 ~ 40.0 Hz	Pitch modulation speed
03	Wave AM Depth	0 ~ 100 %	Amplitude modulation depth
04	Wave AM Freq.	0.05 ~ 40.0 Hz	Amplitude modulation speed
05	Low Gain	-12 ~ + 12dB	Low-range gain
06	High Gain	-12 ~ + 12dB	High-range gain

OUTPUT/EFFECT COPY

PLAY → F7 : Out → F8 : EF → F1 : [Cpy]

Copies effects from one voice to another.

Source voice	A01 ~ D16



Description

- This function copies effects and their parameter settings from any selected voice into the voice you are editing.
- Before executing the copy, you can use the F1 :Audi function to "audition" the sound that the copy will produce.
- After selecting the F1 :Audi function, you can use the F8 :Org function to toggle between the sound of the original effects and the sound of the new effects.

Procedure

1. If the source voice is in a different bank than the voice you are editing, press the appropriate bank button (A ~ D).

2. Move the cursor to the voice that you want to copy from. You can move the cursor using the dial, the cursor buttons (◁△▽▷), the program buttons (1 ~ 16), or the INC/YES and DEC/NO buttons.

3. Press F1 :Audi to enter "audition" mode.
The word "Audi" on the screen begins flashing. If you now play on the keyboard, you will hear how the voice you are editing sounds when combined with the effects set up for the voice indicated by the cursor.

While the "Audi" display is flashing, you can press F8 :Org to toggle between the original and new sound for the voice you are editing.

4. Press ENTER to proceed with the copy.
If you want to cancel the copy, press EXIT instead. This will return you to the EFFECT PARAMETER screen.
▼ When you press ENTER , the screen displays the "Are you sure?" query.

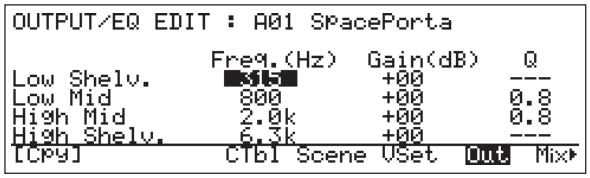
5. Press INC/YES to execute the copy.
If you do not want to proceed, press DEC/NO or EXIT instead.
This will return you to audition mode.

OUTPUT/EQUALIZER

PLAY → F5 : Out → F8 : EF → F8 : EQ

Sets the equalizer.

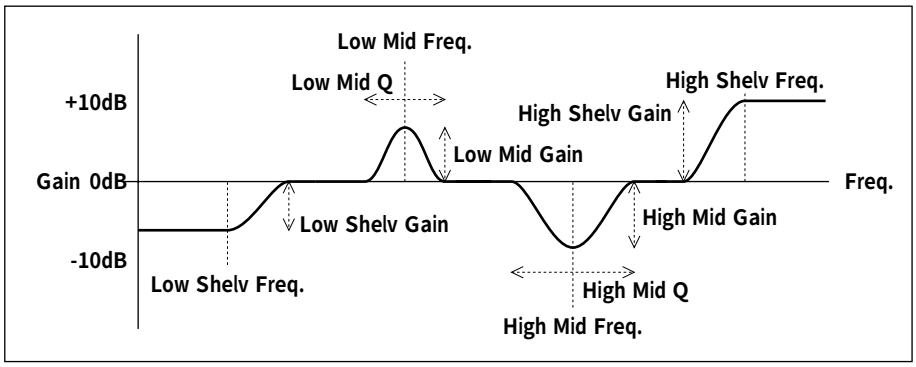
Low Shelv.	Freq.	32 Hz ~ 2.0 kHz
	Gain	-10 ~ +10 dB
Low Mid.	Freq.	160 Hz ~ 6.3 kHz
	Gain	-10 ~ +10 dB
	Q	0.1 ~ 5.0
High Mid.	Freq.	315 Hz ~ 8.0 kHz
	Gain	-10 ~ +10 dB
	Q	0.1 ~ 5.0
High Shelv.	Freq.	500 Hz ~ 16.0 kHz
	Gain	-10 ~ +10 dB



Description

- Sets the characteristics of the four-band equalizer. The equalizer uses shelving-type equalization for the outer two bands (low and high), and picking-type equalization for the middle two bands (low-mid and high-mid).

- Freq.: Sets the central frequency for the equalizer band.
- Gain: Sets the gain applied to the frequency specified by Freq.
- Q: Sets the bandwidth, relative to the center frequency, over which gain is applied. Bandwidth decreases as Q increases. Q settings are available only for the low-mid and high-mid bands.



- You can use the F1 :[Cpy] function to copy equalizer settings from another voice. (→ REFERENCE: 1-53)
- Press F8 :Mix to return to the mixer setup screen. (→ REFERENCE: 1-41)

- Press EXIT or PLAY to return to the main PLAY-mode screen.
- Press F4 , F5 , or F6 to switch to another PLAY-mode function.

Important

- Signals to the ELEMENT outputs do not pass through the equalizer.
- Some equalizer settings may produce explosive sounds or other undesirable noise. You can correct the problem by lowering the Q value or gain value, or by adjusting the frequency.

FYI

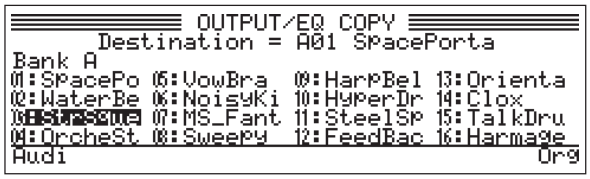
- The Quick Edit EQ functions operate relative to the equalizer settings described above.
- You can use the 9 ~ 12 buttons to toggle elements on and off during editing.

OUTPUT/EQUALIZER COPY

PLAY → F7 : Out → F8 : EF → F8 : EQ → F1 : [Cpy]

Copies equalizer settings from one voice to another.

Source voice	A01 ~ D16



Description

- This function copies equalizer settings from any selected voice into the voice you are editing.
- Before executing the copy, you can use the F1 :Audi function to "audition" the sound that the copy will produce.
- After selecting the F1 :Audi function, you can use the F8 :Org function to compare the voice's original sound against the sound it will have with the new equalizer settings.

Procedure

1. If the source voice is in a different bank than the voice you are editing, press the appropriate bank button (A ~ D).

2. Move the cursor to the voice whose equalizer settings you want to copy. You can move the cursor using the dial, the cursor buttons (◁△▽▷), the program buttons (1 ~ 16), or the INC/YES and DEC/NO buttons.

3. Press F1 :Audi to enter "audition" mode.
The word "Audi" on the screen begins flashing. You can now use the keyboard to hear how the voice you are editing will sound after you have completed the copy.

While the "Audi" display is flashing, you can press F8 :Org to toggle between the original and new sound for the voice you are editing.

4. Press ENTER to proceed with the copy.
If you want to cancel the copy, press EXIT instead. This will return you to the OUTPUT/EQUALIZER screen.
▼ When you press ENTER, the screen displays the "Are you sure?" query.

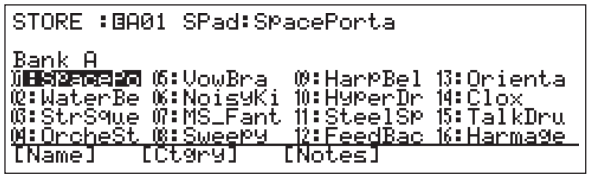
5. Press INC/YES to execute the copy.
If you do not want to proceed, press DEC/NO or EXIT instead. This will return you to the audition mode.

STORE

PLAY → Edit the voice → STORE

Stores an edited voice to main memory.

Storage location	A00 ~ D16



Description

- To retain editing results, you must store the edited voice into a memory location (voice number). When storing the voice, you can give it a name and assign it a new category. You can also enter a comment to be displayed along with the voice name.

Important

- When you store a voice to memory, you erase the voice data that was originally stored at that location (voice number). If you need to retain the original data, save it to floppy disk before executing the storage procedure. (→ REFERENCE: 3-9)
- You can execute the storage procedure from any level within PLAY mode. You cannot perform storage while in SYSTEM or DISK mode.
- You cannot execute storage if the SYSTEM mode's "Memory Protect" setting is "on". (→ REFERENCE: 2-13)

FYI

- You can use the Store function to copy an existing (unedited) voice to a different voice number. Select the voice you want to copy, then store it to the other voice number without making any changes. You will then have the identical voice existing at two different voice numbers.

Procedure

1. Press STORE.

▼ The LCD lists the names of the voices in the currently selected bank.

2. Use the bank buttons, dial, cursor button, INC/YES button, or DEC/NO button to move the cursor to the voice number that you want to store to.

▼ When the cursor is at the desired voice number, you are ready to continue. If you need to register a new name for your edited voice, proceed to Step 3 below. If you want to retain the name that is currently highlighted on the screen, jump to Step 5.

3. Press F1 :[Name].

▼ The voice-name entry screen appears.

4. Enter the voice name.

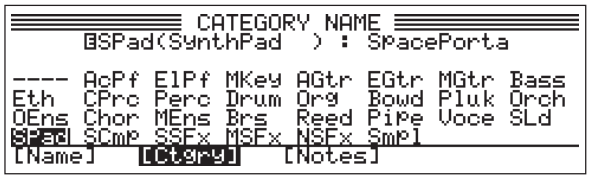
Enter a voice name of up to ten characters. For information about how to enter characters, refer to the BASICS section. (→ BASICS: 3-26)

When you have finished entering the name, press [EXIT]. The VP1 returns you to the previous screen.

5. Press [F3] :[Ctgry] to set a new category.

(If you do not need to change the category, jump to Step 7.)

▼ The category selection screen appears.



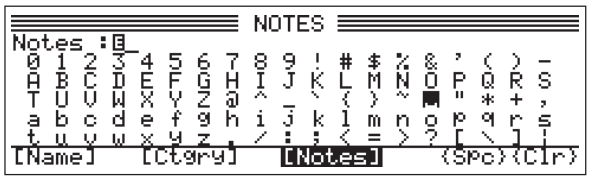
6. Select a category.

Move the cursor to the desired category name, then press [EXIT] to select the category and return to the original screen. Refer to the BASICS section (→ BASICS: 3-21) for information about categories.

7. Press [F5] : [Notes] to enter a comment.

(If you do not need to change the comment, jump to Step 9.)

▼ The comment entry screen appears.



8. Enter a comment.

Enter a comment of up to 32 characters, then press [EXIT] to return to the previous screen.

The VP1 will display a “Notes” window showing this comment whenever you select this voice. If you do not want to display the “Notes” window for this voice, enter a space as the first character of the comment.

9. Press [ENTER].

▼ The screen displays a message asking for confirmation.

10. Press [INC/YES] to execute the store.

▼ If you with to cancel the store, press [DEC/NO] instead.

11. Press [EXIT].

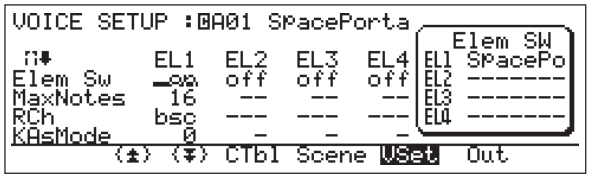
▼ The VP1 selects the newly stored voice as your current voice, and returns you to the screen that was displayed just before you began the storage procedure.

COMPARE

PLAY → Edit the voice → COMPARE

Compares the sound of an edited voice against sound of the original (unedited) voice.

no settings



Description

- While you are editing a voice, you can use the Compare function to compare the voice's new sound against its original sound.
- The Compare function temporarily restores the original voice. The displayed parameter values and the red LEDs along the right of the Quick Edit sliders also temporarily revert to their original status.
- A C mark appears in front of the voice number on the screen to indicate that you are currently in Compare mode, and the cursor shape changes to an underline.

Important

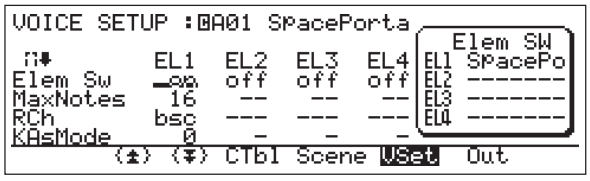
- Editing functions are disabled during comparison.
- The Compare function will not operate if you have not yet edited the voice.

FYI

- You can combine Quick Edit and Compare functions to achieve dynamic sound changes during live performance. First use the Quick Edit functions to change the sound of the voice, then toggle the Compare function on and off to switch back and forth between the edited and unedited sounds.
- The comparison function remains available during the storing procedure, so that you can compare voice names, categories, and comments.

Procedure

1. **During the course of editing, press COMPARE.**
   ▼ The LED above the button begins to blink.



2. **Play at the keyboard to reproduce the original sound.**
3. **Press COMPARE to return to the editing process.**

Chapter 2

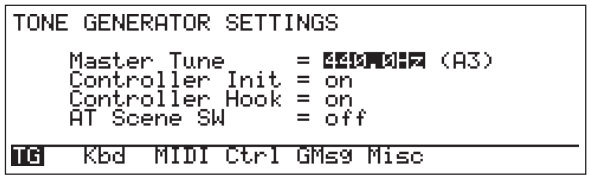
SYSTEM Mode

SYSTEM-mode functions affect the sound and operation of the entire system. Use these functions to set up the tone generator, keyboard action, MIDI parameters, control numbers, and other system-wide features.

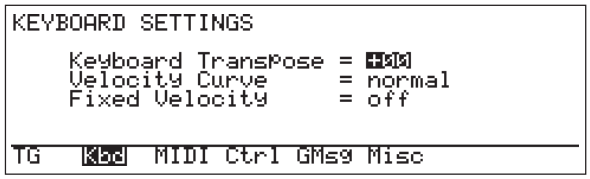
Outline

You use the six SYSTEM-mode functions to implement a variety of system-wide settings. Enter the mode by pressing [SYSTEM], then select the desired function by pressing the appropriate function button ([F1] ~ [F6]). Each function button switches you a different display screen, as illustrated below.

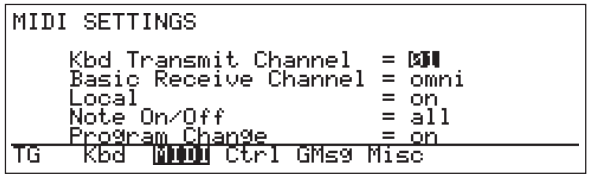
■ [F1] : TG Tone-generator settings



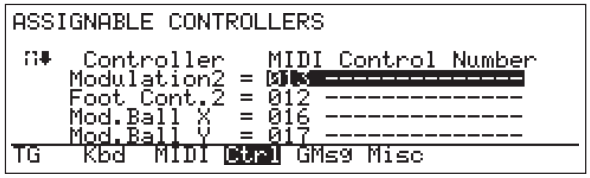
■ [F2] : Kbd Keyboard settings



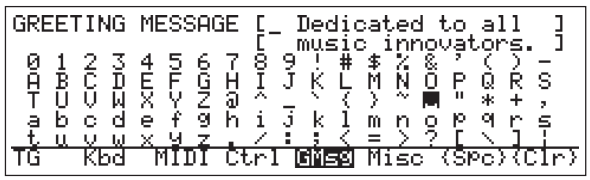
■ [F3] : MIDI MIDI settings



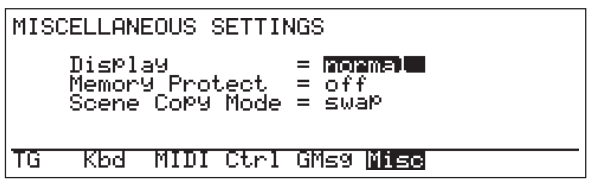
■ [F4] : Ctrl Assignment of MIDI control numbers



■ [F5] : GMsg Greeting message

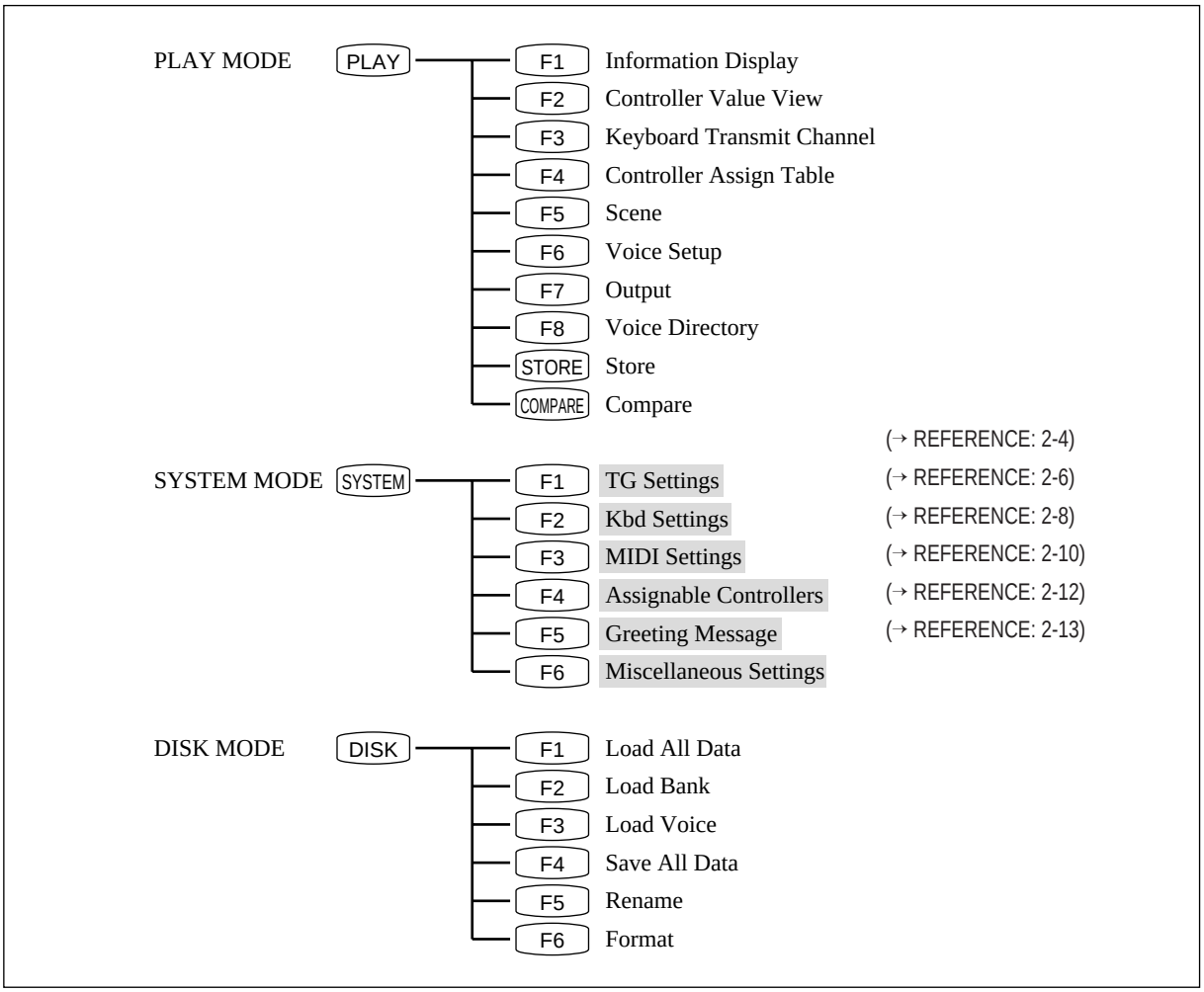


■ [F6] : Misc Miscellaneous settings



SYSTEM Functions

The following pages describe the functions denoted by shaded boxes below.



Important

- System settings affect all voices. You cannot use SYSTEM mode to make individual settings for specific voices.

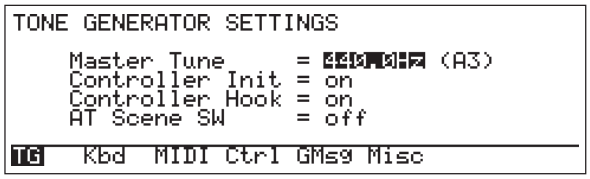
- System settings become effective immediately. You do not need to execute a store procedure to write new settings into memory.

TONE GENERATOR SETTINGS

SYSTEM → F1 : TG

Sets the properties of the tone generator.

Master Tune	420.0 ~ 460.0 Hz
Controller Init	off, on
Controller Hook	off, on
AT Scene SW	off, on



Description

- Use this function to set up the tone generator.
- Master Tune: Selects the frequency for keyboard note A3. The VP1 tunes the entire system relative to this frequency.
- Controller Init: If “on”, the VP1 automatically switches controller settings to the “initial” scene (→ REFERENCE: 1-14) when you switch to a new voice. If “off”, the VP1 reads and applies the physical controller settings each time you select a new voice.
- Controller Hook: Determines how physical controllers become effective after a scene change. If the setting is “off”, each physical controller becomes effective as soon as you move it. (Controller LEDs are always green.) If the setting is “on”, the physical controller does not become effective until it moves past the internal controller position established by the scene.
- AT Scene SW: Determines whether aftertouch and touch-EG data are affected by scene change. If the setting is “off”, scene changes will have no affect on internal controller values for aftertouch and touch EG.
- Press EXIT or PLAY to return to PLAY mode.
- Press F2 ~ F6 to change to another SYSTEM-mode function.

Important

- If Controller Init is “off”, the sound of a newly selected voice will depend on current controller settings — and in some cases may be different than expected.
- Vibration from the keyboard or a speaker may occasionally cause a controller to shift slightly. If Controller Hook is “off”, this shift may cause the controller to become effective, producing an unintended and possibly jarring change in the sound.

FYI

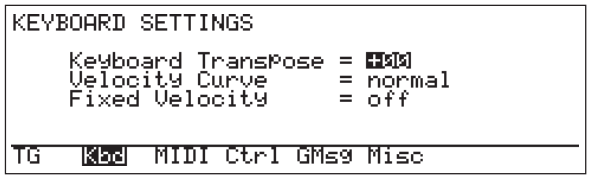
- The VOICE SETUP function’s “Detuning” (→ REFERENCE: 1-23) and “Noteshift” (→ REFERENCE: 1-24) values operate relative to the “Master Tune” setting described above.

KEYBOARD SETTINGS

SYSTEM → F2 : Kbd

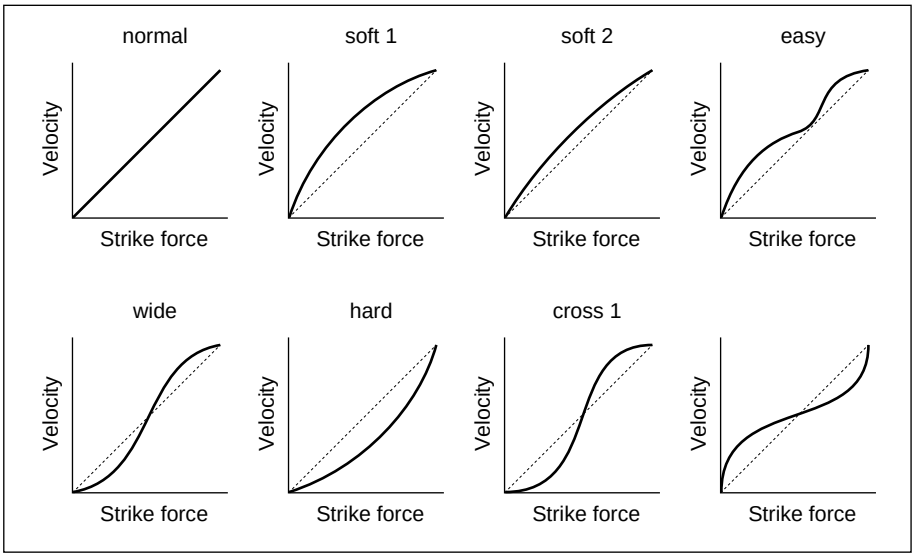
Sets the properties of the keyboard.

Keyboard Transpose	-48 ~ +48
Velocity Curve	normal, soft 1, soft 2, easy, wide, hard, cross 1, cross 2
Fixed Velocity	0 ~ 127, off



Description

- Use this function to set the keyboard properties.
- Keyboard Transpose: Shifts the pitch of the keyboard up or down, by semitones. Setting the value to +3, for example, shifts all keyboard notes up 1-1/2 tones; setting the value to -12 transposes all notes down one octave.
- Velocity Curve: Sets the relationship between key-strike force and velocity. (Refer also to the illustrations on the next page.)
  - normal
    Velocity increases in proportion to striking force.
  - soft 1, soft 2
    Light action; produces loud sound relative to striking force. Suitable for performers with light keyboard touch.
  - easy
    Produces loud sound relative to striking force for weak and strong striking forces, but fairly stable output level over the range of typical intermediate striking forces.
  - wide
    Wide dynamic range: light touch produces disproportionately low velocity, while strong touch produces disproportionately high velocity.
  - hard
    Hard action; produces weak sound relative to striking force. Suitable for performers with heavy keyboard touch.
  - cross 1, cross 2
    Use either of these curves to obtain a velocity-controlled crossfade effect between two keyboards operating in unison.



- Fixed Velocity: Sets velocity to a fixed value (0 ~ 127); all key strikes produce the same velocity, regardless of the striking force. Set this "off" if you do not require fixed velocity.

- Press EXIT or PLAY to return to PLAY mode.
- Press F1 or F3 ~ F6 to change to another SYSTEM-mode function.

Important

- The "Velocity Curve" setting is meaningful only if "Fixed Velocity" is set "off".
- If you set "Fixed Velocity" to an unusually low value, some voices may become inaudible.

FYI

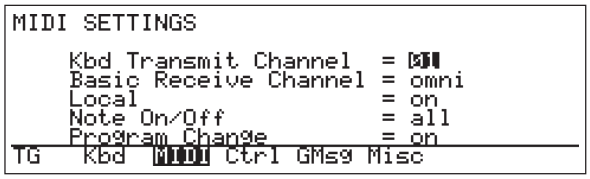
- The "Keyboard Transpose", "Velocity Curve", and "Fixed Velocity" settings affect the velocity and note-number data sent out through the MIDI OUT connector.

MIDI SETTINGS

SYSTEM → F3 : MIDI

Sets values related to MIDI operation.

Kbd Transmit Channel	01 ~ 16
Basic Receive Channel	kbd, 01 ~ 16, omni
Local	off, on
Note On/Off	all, odd, even
Program Change	off, on



Description

- Use this function to set values related to MIDI.

- Kbd Transmit Channel: Selects the MIDI channel over which the VP1 transmits keyboard and other performance data.

- Basic Receive Channel: Selects the input channel that drives the VP1 tone generator. Data received from external MIDI devices over the selected channel(s) will drive the tone generator, while data received over other channels will not. If the setting is “kbd”, the VP1 ignores all incoming MIDI data, responding only to the action of its own keyboard. If the setting is “omni”, the VP1 tone generator responds to all channels. Note also that the VP1 will accept program-change requests only if they are received over the selected channel(s).

- Local: Determines whether the VP1 keyboard drives the VP1’s tone generator. If the setting is “on”, the keyboard drives the tone generator, so that playing at the keyboard produces sound from the VP1. If the setting is “off”, the internal connection between the keyboard and tone generator is broken: the keyboard cannot produce local sound but continues to generate MIDI OUT data, while the tone generator responds only to external data coming in through the MIDI IN connector.

- Note On/Off: Determines whether the VP1 accepts incoming MIDI note-on data for all note numbers, or only for even- or odd-numbered notes. If the setting is “odd”, for example, the VP1 produces sound in response to note-on data for odd note numbers, but not in response to note-on data for even note numbers.

- Program Change: Determines whether the VP1 switches voices in response to incoming program-change signals, and whether it can transmit program-change signals to other devices. If the setting is “off”, the VP1 ignores all incoming program-change data and produces no outgoing program-change data. If the setting is “on”, the VP1 switches voices in accordance with program-change numbers received from external MIDI devices, and remains capable of transmitting program-change signals to other MIDI devices.But note that regardless of the setting, the VP1 always ignores program change numbers 64 through 127, and also ignores any bank-select data.

- Press [EXIT] or [PLAY] to return to PLAY mode.
- Press [F1], [F2], or [F4] ~ [F6] to change to another SYSTEM-mode function.

Important

- For any given voice element, the element's "RCh" (receive-channel) setting (→ REFERENCE: 1-19) takes precedence over the "Basic Receive Channel" setting described above. If the RCh setting is "basic", the Basic Receive Channel setting is effective. But if RCh is set to a value between 1 and 16, then the RCh setting is used regardless of the Basic Receive Channel setting.

FYI

- Set "Local" to "off" when you want to use the VP1 as the master keyboard for driving an external device, or as a sound source driven by an external device.

- When driving two VP1s from an external keyboard or sequencer, you can use "Note On/Off" settings to effectively double the available polyphony.

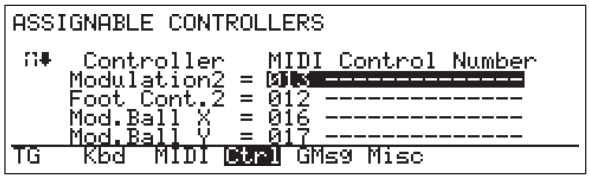
- VP1 controller LEDs operate only when VP1 channels and MIDI channel settings are in agreement — for example, when an element's RCh setting is "basic" and the Basic Receive Channel is "kbd" or "omni", or when the Kbd Transmit Channel and an element's RCh channel are set to the same value.

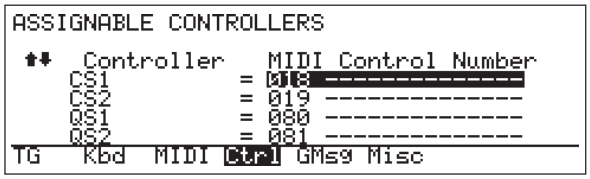
ASSIGNABLE CONTROLLERS

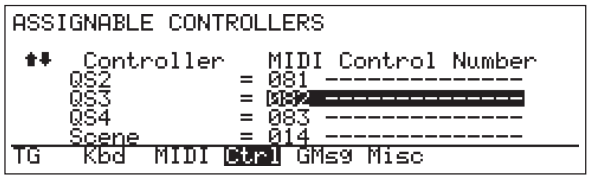
SYSTEM → F4 : Ctrl

Assigns control numbers to the VP1 controllers.

Modulation Wheel 2	001 ~ 031, 033 ~ 119
Foot Controller 2	001 ~ 031, 033 ~ 119
Modulation Ball x	001 ~ 031, 033 ~ 119
Modulation Ball y	001 ~ 031, 033 ~ 119
Continuous Slider 1	001 ~ 031, 033 ~ 119
Continuous Slider 2	001 ~ 031, 033 ~ 119
Quick Edit Slider 1	001 ~ 031, 033 ~ 119
Quick Edit Slider 2	001 ~ 031, 033 ~ 119
Quick Edit Slider 3	001 ~ 031, 033 ~ 119
Quick Edit Slider 4	001 ~ 031, 033 ~ 119
Scene Controller	001 ~ 031, 033 ~ 119







Description

- Use this function to assign MIDI control numbers to the eleven assignable controllers listed above.

- The display is not large enough to show the entire list of controller items at one time. Scroll through the items using the ▽ and △ cursor buttons.

- When you select any of the numbers listed below at left, the indicated controller name appears to the right of the number in the LCD. For other numbers, a string of hyphens appears.

  001: Modulation Wheel
  002: Breath Control
  004: Foot Controller
  007: Main Volume
  064: Hold 1
  065: Portamento Sw

- Press EXIT or PLAY to return to PLAY mode.
- Press F1 ~ F3, F5, or F6 to change to another SYSTEM-mode function.

Important

- You can use this function to rearrange controller functions, or to assign more than one controller to the same parameter. But note that these settings affect all voices. In addition, changing the assignments can complicate the management of sequence data. In general, Yamaha recommends that you leave the settings at their factory defaults (see below).

- The control numbers for Modulation Wheel 1 and Foot Controller 1 cannot be changed.

FYI

- These settings also affect the control-change (control-number) data that the VP1 outputs through the MIDI OUT connector.

- Factory settings for assignable controllers are as follows.

Modulation Wheel 2	013
Foot Controller 2	012
Modulation Ball x	016
Modulation Ball y	017
Continuous Slider 1	018
Continuous Slider 2	019
QS 1	080
QS 2	081
QS 3	082
QS 4	083
Scene Controller	014

- Markings at the upper left of the LCD indicate the direction in which scrolling is possible. A ↓ marking indicates that you can scroll downward only; ↑↓ means that you can scroll in either direction; ↑ means that you can scroll upward only.

GREETING MESSAGE

SYSTEM → F5 : GMsg

Sets the VP1's greeting.

First line	20 characters
Second line	20 characters

Description

- This function sets the greeting. The greeting appears on the LCD for two seconds after power is switched on.
- For instructions about entering characters, refer to the BASICS section. (→ BASICS: 3-26)
- Press EXIT or PLAY to return to PLAY mode.
- Press F1 ~ F4 or F6 to change to another SYSTEM-mode function.

FYI

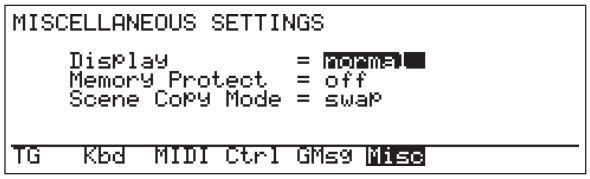
- You may want to write your name or your band's name into the greeting, or enter a message that has humorous or personal significance. But you can also use the greeting message as a sort of data identification tag, as described immediately below.
- If you frequently reload different groups of voices from different floppy disks, you may find that you sometimes lose track of which voice group is currently loaded. You can avoid this confusion by writing a separate greeting message for each voice group before storing the group to disk. Write the name of the voice set, or the filename you will use, directly into the message. When you save the data to disk ("Save All Data"), the greeting message gets stored as well. When you then execute a "Load All Data", the stored message gets reloaded. This means that the greeting message that appears when you switch on the power will identify the currently loaded voice group.

MISCELLANEOUS SETTINGS

SYSTEM → F6 : Misc

Sets the display mode, switches memory protection on or off, and sets the scene-copy mode.

Display	normal, reverse
Memory Protect	off, on
Scene Copy Mode	confirm, swap, no swap



Description

- Use this function to set the display and scene-copy modes, and to switch memory protection on or off.

- Display: Set this to “normal” for black-on-white display, or to “reverse” for white-on-black display. (Use the contrast knob to adjust the contrast as necessary.)

- Memory Protect: Set this “on” to disable all load and store operations, thereby protecting the current contents of internal memory against accidental overwriting. Set this “off” if you plan to load or store data to internal memory.

- Scene Copy Mode: Determines the processing that occurs during element copying if the initial scene for the source voice is different from the initial scene for the destination voice. For details, refer to the explanation of the VOICE SETUP Element Copy function. (→ REFERENCE: 1-38)

- Press EXIT or PLAY to return to PLAY mode.
- Press F1 ~ F5 to change to another SYSTEM-mode function.

Chapter 3

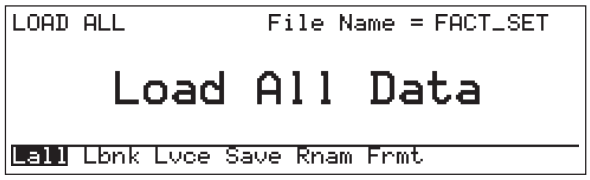
DISK Mode

This chapter explains the various floppy-disk operations supported by the VP1. You can use these functions to save voice and system data to disk, to load some or all data from disk into internal memory, to format disks, and to rename disk files.

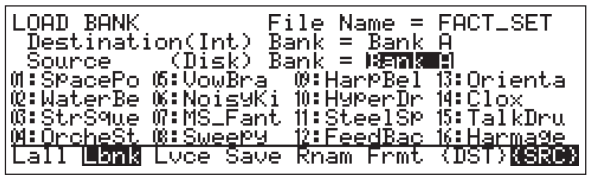
Outline

Use DISK-mode functions to carry out floppy disk operations — saving, loading, formatting, and file renaming. Enter the mode by pressing [DISK], then select the desired function by pressing the appropriate function button ([F1] ~ [F6]). Each function button switches you to the corresponding display screen, as illustrated below.

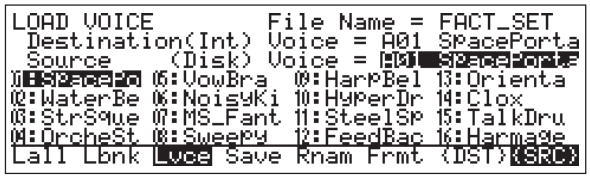
■ [F1] : Lall Load all data from disk



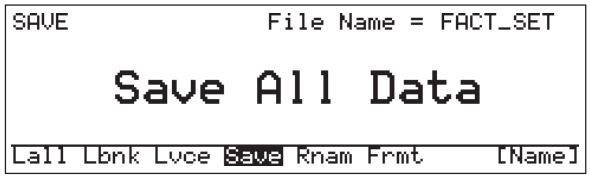
■ [F2] : Lbnk Load selected bank of voice data from disk



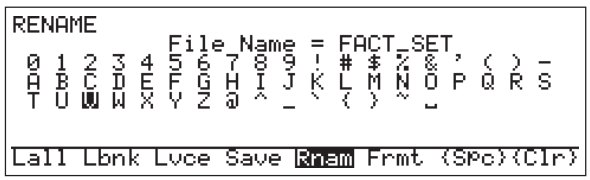
■ [F3] : Lvce Load selected voice from disk



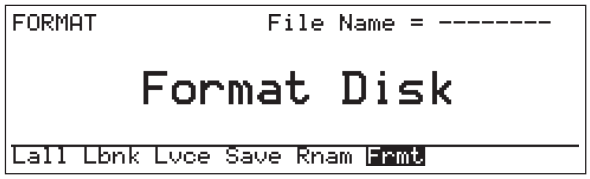
■ [F4] : Save Save all internal data to disk



■ [F5] : Rnam Rename the file on the disk

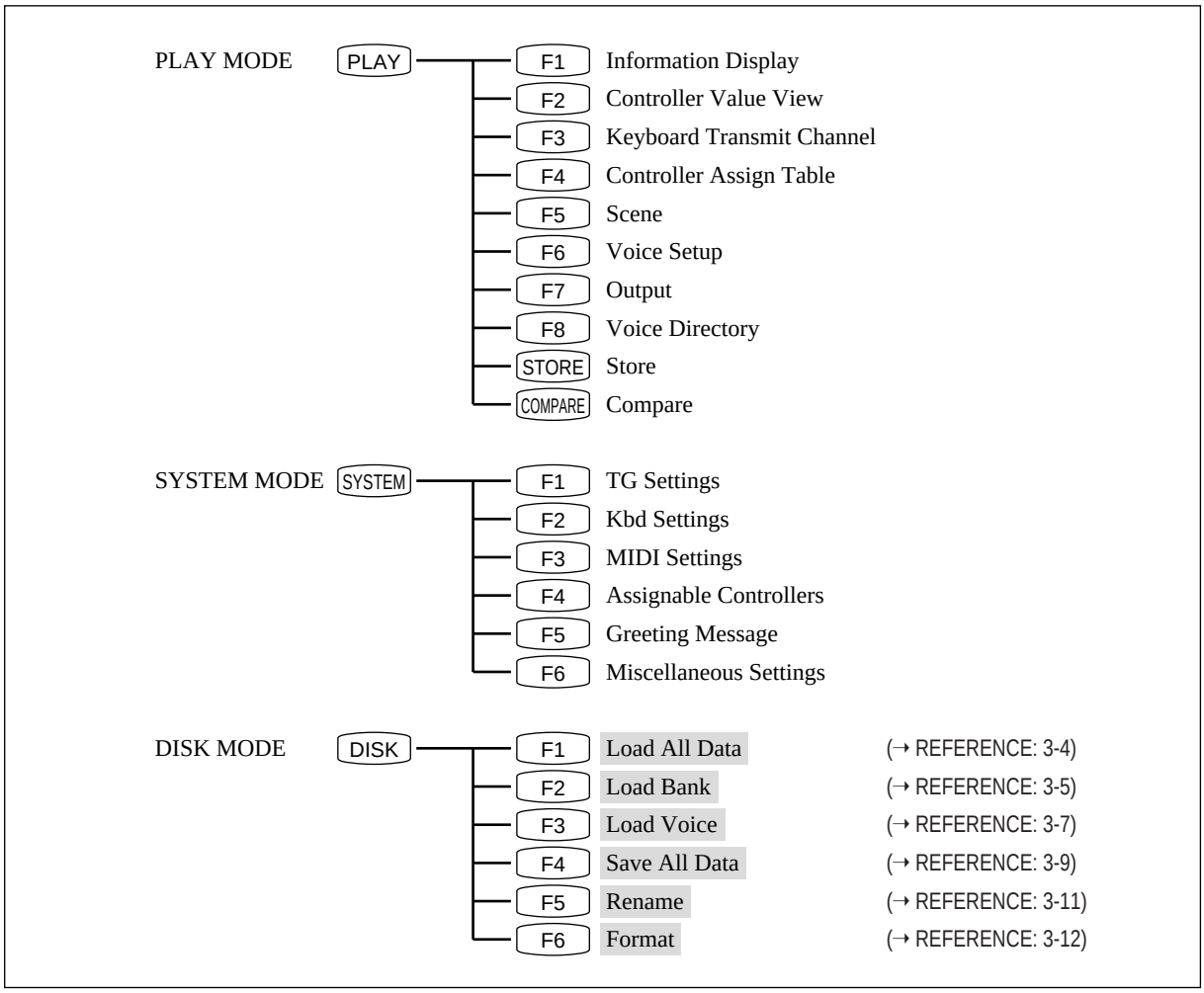


■ [F6] : Frmt Format the disk



DISK Functions

The following pages describe the functions denoted by shaded boxes below.



Important

- The VP1 cannot perform saves to unformatted disks. You must format a disk before you can save to it.

FYI

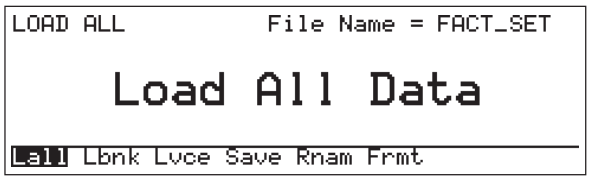
- The VP1 formats disks into standard MS-DOS format (1.44M, 18 sectors per track). This means that you can use a conventional MS-DOS-compatible computer to store and process your data files.

LOAD ALL DATA

Insert the disk → [DISK] → [F1] : Lall

Loads all data from the disk.

no settings



Description

- This operation copies all floppy-disk data — one file, containing 64 voices and system data — into the VP1's internal memory. Note that "system data" refers to the settings implemented in SYSTEM mode.

- Press [EXIT] or [PLAY] to return to PLAY mode.
- Press [F2] ~ [F6] to change to another DISK-mode function.

Important

- The VP1 will not perform this operation if Memory Protect (→ REFERENCE: 2-13) is set "on".
- This operation overwrites all data currently existing in the VP1's internal memory. If you want to retain this original data, you must save it to a different floppy disk (→ REFERENCE: 3-9) before starting the load operation.

Procedure

1. Check that the appropriate filename is displayed at the top right of the screen.

2. Press [ENTER].

▼ The screen displays the "Are you sure?" query.

3. To proceed, press [INC/YES].

If you do not want to proceed, press [DEC/NO] or [EXIT] to cancel the operation and return to the previous screen.

▼ When you press [INC/YES], the VP1 begins loading. After a few moments the "Now loading!" message appears on the display. When loading is finished, the screen displays the "Completed!" message.

4. Press [EXIT].

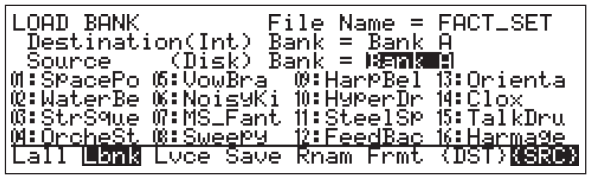
▼ The VP1 returns to PLAY mode.

LOAD BANK.

Insert the disk → [DISK] → [F2] : Lbnk

Loads one bank of voice data from the floppy disk.

Destination(Int) Bank	Bank A ~ Bank D
Source(Disk) Bank	Bank A ~ Bank D



Description

- This operation copies one bank of voice data from the saved data on the floppy disk.

- Destination (Int) Bank: Selects the internal bank into which data are copied. To select, press [F7] :{DST} to move the cursor to this item, then change the bank setting as necessary. (See next page.)

- Source (File) Bank: Selects the voice bank copied from the floppy disk. If you need to change the selection, press [F8] :{SRC} to move the cursor to this item, then change the bank setting as necessary.

- Press [EXIT] or [PLAY] to return to PLAY mode.
- Press [F1] for [F3] ~ [F6] to change to another DISK-mode function.

Important

- The VP1 will not perform this operation if Memory Protect (→ REFERENCE: 2-13) is set “on”.
- This operation overwrites voices currently residing in the destination bank. If you want to retain the original voices, you must save *all* internal data to a different floppy disk (→ REFERENCE: 3-9) before starting the load operation.

Procedure

1. Check that the appropriate filename is displayed at the top right of the screen.

2. Select the source bank by pressing the appropriate bank button (A ~ D), rotating the dial, or pressing the INC/YES or DEC/NO button.

3. Press F7 :{DST} to move the cursor to the "Destination (Int) Bank" entry.

4. Select the destination bank by pressing the appropriate bank button (A ~ D), rotating the dial, or pressing the INC/YES or DEC/NO button.

5. Press ENTER .

▼ The screen displays the "Are you sure?" query.

6. To proceed, press INC/YES .

If you do not want to proceed, press DEC/NO or EXIT to cancel the operation and return to the previous screen.

▼ When you press INC/YES , the VP1 begins loading. After a few moments the "Now loading!" message appears on the display. When loading is finished, the screen displays the "Completed!" message.

7. Press EXIT .

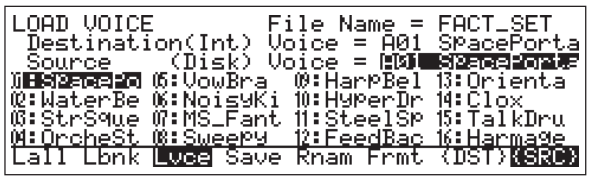
▼ The VP1 returns to PLAY mode.

LOAD VOICE

Insert the disk → [DISK] → [F3] : Lvce

Loads one voice from the floppy disk.

Destination(Int) Voice	A01 ~ D16
Source(Disk) Voice	A01 ~ D16



Description

- This operation copies one voice (one set of voice data) from the saved data on the floppy disk.

- Destination (Int) Voice: Selects the internal voice number into which data are copied. To select, press [F7] :{DST} to move the cursor to this item, then change the voice setting as necessary. (See next page.)

- Source (File) Voice: Selects the voice copied from the floppy disk. If you need to change the selection, press [F8] :{SRC} to move the cursor to this item, then change the voice setting as necessary.

- Press [EXIT] or [PLAY] to return to PLAY mode.
- Press [F1], [F2], or [F4] ~ [F6] to change to another DISK-mode function.

Important

- The VP1 will not perform this operation if Memory Protect (→ REFERENCE: 2-13) is set “on”.
- This operation overwrites the data currently stored in the destination voice. If you want to retain the original data, you must save *all* internal data to a different floppy disk (→ REFERENCE: 3-9) before starting the load operation.

Procedure

1. Check that the appropriate filename is displayed at the top right of the screen.

2. Select the source voice by pressing the appropriate bank and program buttons (A ~ D, 1 ~ 16), or by using the cursor buttons, the dial, or the INC/YES or DEC/NO button.

3. Press F7 :{DST} to move the cursor to the "Destination (Int) Voice entry.

4. Select the destination voice by pressing the appropriate bank and program buttons (A ~ D)(1 ~ 16), or by using the cursor buttons, the dial, or the INC/YES or DEC/NO button.

5. Press ENTER.

▼ The screen displays the "Are you sure?" query.

6. To proceed, press INC/YES.

If you do not want to proceed, press DEC/NO or EXIT to cancel the operation and return to the previous screen.

▼ When you press INC/YES, the VP1 begins loading. After a few moments the "Now loading!" message appears on the display. When loading is finished, the screen displays the "Completed!" message.

7. Press EXIT.

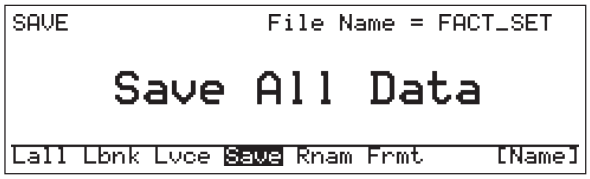
▼ The VP1 returns to PLAY mode.

SAVE ALL DATA

Insert the disk → [DISK] → [F4]: Save

Saves all internal data to floppy disk.

Filename (if necessary): Eight characters or less



Description

- This operation saves all internal data — 64 voices and SYSTEM-mode settings — into a single large file on the floppy disk.
- You can set or change the filename by pressing [F8]:[Name], then entering a name of up to eight characters.
- Press [EXIT] or [PLAY] to return to PLAY mode.
- Press [F1] ~ [F3], [F5], or [F6] to change to another DISK-mode function.

Important

- A single floppy disk can store only one save file (64 sets of voice data, together with one set of system data). If you store to a disk that already contains a save file, the new save file will overwrite the old one.
- If you do not explicitly set a filename, the VP1 reuses the name of the existing file on the disk. If the disk is newly formatted, the VP1 uses the name “NEW-FILE” .
- You cannot save to an unformatted disk. If necessary, format the disk using the FORMAT function. (→ REFERENCE: 3-12)
- You cannot save to a disk if the disk’s write-protect tab is set to “protect”. The tab, located at the lower-right corner on the rear side of the disk casing, is in “protect” position when it is pushed downward so that the window is open.

FYI

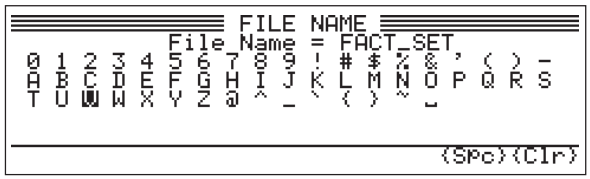
- Filenames cannot start with a space. If you enter a space in the middle of a filename, the space is automatically converted to an underscore character. (If you enter the name as a string of spaces, the name automatically converts to “------”.

Procedure

1. **Check the filename displayed at the top right of the screen.**

2. **If you want to change the filename, press [F8] :[Name] and proceed to Step 3. If you do not need to change the name, jump to Step 4.**

3. **Enter the filename of your choice.**
   For instructions about entering filenames, refer to the BASICS section. (→ BASICS: 3-26)



4. **Press [ENTER].**
   ▼ The screen displays the "Are you sure?" query.

5. **To proceed, press [INC/YES].**
   If you do not want to proceed, press [DEC/NO] or [EXIT] to cancel the operation and return to the previous screen.
   ▼ When you press [INC/YES], the VP1 begins the save operation. After a few moments the "Now saving!" message appears on the display. When saving is finished, the screen displays the "Completed!" message.

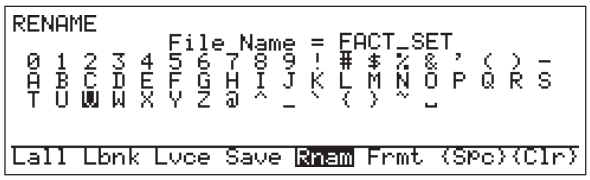
6. **Press [EXIT].**
   ▼ The VP1 returns to PLAY mode.

RENAME

Insert the disk → [DISK] → [F5] : Rnam

Changes a filename.

Filename: Eight characters or less



Description

- This operation changes the name of the save file stored on the floppy disk.

- Press [EXIT] or [PLAY] to return to PLAY mode.
- Press [F1] ~ [F4] or [F6] to change to another DISK-mode function.

Important

- You cannot change the filename if the disk's write-protect tab is set to "protect". The tab, located at the lower-right corner on the rear side of the disk casing, is in "protect" position when it is pushed downward so that the window is open.

- Filenames cannot start with a space. If you enter a space in the middle of a filename, the space is automatically converted to an underscure character. (If you enter the name as a string of spaces, the name automatically converts to "------").

Procedure

1. Enter the new filename.
For instructions about how to enter filenames, refer to the BASICS section. (→ BASICS: 3-26)

2. Press [ENTER].
▼ The screen displays the "Are you sure?" query.

3. To proceed, press [INC/YES].
If you do not want to proceed, press [DEC/NO] or [EXIT] to cancel the operation and return to the previous screen.
▼ When renaming is finished, the "Completed!" message appears on the LCD.

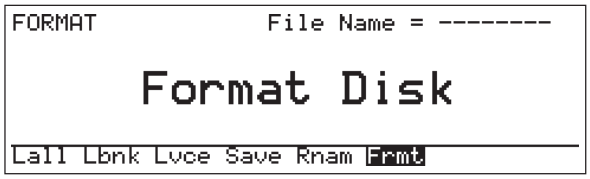
4. Press [EXIT].
▼ The VP1 returns to PLAY mode.

FORMAT

Insert the disk → [DISK] → [F6] : Frmt

Formats the disk.

no settings



Description

- This operation formats the floppy disk.
- When format is completed, the displayed filename changes to "------".
- Press [EXIT] or [PLAY] to return to PLAY mode.
- Press [F1] ~ [F5] to change to another DISK-mode function.

Important

- You must use a 3.5-inch 2HD (MF2HD) floppy disk. The VP1 formats the disk into standard MS-DOS format (1.44MB, 18 sectors per track).
- You cannot format a disk if its write-protect tab is set to "protect". The tab, located at the lower-right corner on the rear side of the disk casing, is in "protect" position when it is pushed downward so that the window is open.

Procedure

1. Press [ENTER].

▼ The screen displays the "Are you sure?" query.

2. To proceed, press [INC/YES].

If you do not want to proceed, press [DEC/NO] or [EXIT] to cancel the operation and return to the previous screen.

▼ When you press [INC/YES], the VP1 begins the format operation. After a few moments the "Now formatting!" message appears on the display. When formatting is finished, the screen displays the "Completed!" message.

3. Press [EXIT].

▼ The VP1 returns to PLAY mode.

Appendix

Function List

PLAY PLAY MODE

PLAY	During PLAY operation you can select and play any of the VP1's voices. The category and name of the currently selected voice appear in large letters at the center of the display. (→ REFERENCE: 1-4)
• EXIT Close notes	Closes the "Notes" window (comment window). To redisplay the window, press ENTER. (→ REFERENCE: 1-54)
F1 Information Display	Shows the following information about each element of the currently selected voice: name, maximum polyphony, receive-channel setting, and keyboard range. (→ REFERENCE: 1-5)
F2 Controller Value View	Indicates the current value (position) of each controller. (→ REFERENCE: 1-6)
F3 Keyboard Transmit Channel	Changes the keyboard transmit channel. (→ REFERENCE: 1-7)
F4 Controller Assign Table	Assigns controllers to parameters. (→ REFERENCE: 1-10)
• F1 Control Range	Determines how parameter values change in response to controller movement. (→ REFERENCE: 1-12)
F5 Scene	Stores a scene for an element, or selects the voice's initial scene. (→ REFERENCE: 1-14)
F6 Voice Setup	Sets a wide range of parameters for each voice element. (→ REFERENCE: 1-16)
• Element Switch	Switches elements on or off. (→ REFERENCE: 1-17)
• MaxNotes	Sets maximum polyphony for each element. (→ REFERENCE: 1-18)
• Receive Channel	Sets the MIDI receive channel for each element. (→ REFERENCE: 1-19)
• Key Assign Mode	Determines which notes are sounded when the number of keys pressed exceeds the maximum polyphony. (→ REFERENCE: 1-20)
• Volume	Sets the volume for each element. (→ REFERENCE: 1-22)
• Detune	Sets fine-tuning for each element. (→ REFERENCE: 1-23)
• Note Shift	Sets tuning for each element, in semitone increments. (→ REFERENCE: 1-24)

• Pan Range	Sets the pan range for each element. (→ REFERENCE: 1-25)
• Note Limit	Sets the keyboard range for each element. (→ REFERENCE: 1-27)
• Microtuning	Sets the type of tuning system applied to each element. (→ REFERENCE: 1-28)
• Portamento Mode	Sets the portamento mode for each element. (→ REFERENCE: 1-30)
• Portamento Resolution	Sets the resolution of the element's portamento slide. (→ REFERENCE: 1-31)
• PB Range	Sets the pitch-bend range for each element. (→ REFERENCE: 1-32)
• PB Curve	Sets the pitch-bend characteristics for each element. (→ REFERENCE: 1-33)
• Zoned Aftertouch Mode	Sets the aftertouch application mode for each element. (→ REFERENCE: 1-35)
• Zoned Aftertouch Split	Sets the split point for zoned aftertouch. (→ REFERENCE: 1-36)
• Sustain	Enables or disables Sustain-switch operation for each element. (→ REFERENCE: 1-37)
• F1 Element Copy	Copies an element from any voice to the currently selected element. (→ REFERENCE: 1-38)
F7 Output	
• Mixer	Sets levels for direct-output, send-to-effects, and return-from-effects signals. (→ REFERENCE: 1-41)
• F8 Effect	Selects the effects and sets their parameters (→ REFERENCE: 1-43), or copies effects from another voice (→ REFERENCE: 1-50).
• F8 F8 Equalizer	Sets the equalizer (→ REFERENCE: 1-51), or copies equalizer settings from another voice (→ REFERENCE: 1-53).
F8 Voice Directory	Lists the voices in the selected bank. Can be used to switch among voices. (→ REFERENCE: 1-8)
STORE Store	Stores an edited voice to internal memory. (→ REFERENCE: 1-54)
COMPARE Compare	Compares the sound of an edited voice against the sound of the original (unedited) voice. (→ REFERENCE: 1-56)

SYSTEM SYSTEM MODE

F1	TG Settings	Sets the properties of the tone generator. (→ REFERENCE: 2-4)
F2	Kbd Settings	Sets the properties of the keyboard. (→ REFERENCE: 2-6)
F3	MIDI Settings	Sets values related to MIDI operation. (→ REFERENCE: 2-8)
F4	Assignable Controllers	Assigns control numbers to the VP1's assignable controllers. (→ REFERENCE: 2-10)
F5	Greeting Message	Sets the greeting message. (→ REFERENCE: 2-12)
F6	Miscellaneous Settings	Sets the display mode and scene-copy mode, and switches memory protection on or off. (→ REFERENCE: 2-13)

DISK DISK MODE

F1	Load All Data	Loads all data from the floppy disk.(→ REFERENCE: 3-4)
F2	Load 1 Bank	Loads one bank of voice data from the floppy disk. (→ REFERENCE: 3-5)
F3	Load 1 Voice	Loads one voice from the floppy disk. (→ REFERENCE: 3-7)
F4	Save All Data	Saves all internal data to floppy disk. (→ REFERENCE: 3-9)
F5	Rename	Changes a filename. (→ REFERENCE: 3-11)
F6	Format	Formats the disk. (→ REFERENCE: 3-12)

Troubleshooting

This section provides information that may help you solve problems that arise with VP1 operation. Many problems are simply the result of inappropriate settings or bad connections. If the VP1 fails to produce sound, or if sound quality is other than you expect, go through the troubleshooting checks described here to see if you can find the cause.

Begin by running through the following three checks. These should help you locate the source of the problem.

■ **Connect a set of headphones to the VP1. Play on the keyboard and check that sound through the headphones is normal.**

If headphone sound is OK but output through the amps or mixer is not, you may have a bad cable, or your amps or mixer may be improperly connected or set.

■ **Move all controllers around to see whether the sound quality improves.**

Some controller combinations can produce unexpected sound or even total silence. If normal sound returns when you move the controllers, you may have made an inappropriate scene or controller setting.

■ **Try changing to different voices. If the problem occurs with only one voice, the voice settings are probably at fault.**

If the same problem occurs on all voices, check your SYSTEM settings.

Now refer to the relevant section below for specific clues about what may be wrong.

Problems Related to Amplifier, Mixer, or Connections

No sound

- Is power to the amplifier on?
- Is the volume on the amplifier or mixer set correctly?
- Is the amplifier or mixer correctly connected to the VP1's OUTPUT jacks?

(→ BASICS: 1-12)

- Are any of the cables broken or shorted? Try replacing the cables.

Distorted sound

- Have you mistakenly connected the VP1's OUTPUT jacks to the microphone input jacks on your external amp or mixer?

Improper stereo positioning

- Check that the mixer channels connected to the L and R OUTPUTS are correctly assigned to left and right pans.

No effects

- Remember that the VP1 does not apply effects to the signals going to the ELEMENT jacks. Effects are only applied to signals to the OUTPUT jacks.

Problems caused by Inappropriate system settings

No sound

- Check that the “Local” parameter is set to “on”. (→ REFERENCE: 2-8)
- If you are trying to drive the VP1 from an external MIDI: does the transmit channel of the external device match the receive channel on the VP1? (→ REFERENCE: 2-8)

Every alternate note on the keyboard fails to play.

- The Note On/Off parameter is probably set to “odd” or “even”. Change the setting to “all”. (→ REFERENCE: 2-8)

Keys don’t produce the expected pitch.

- Check the setting of the “Keyboard Transpose” parameter. (→ REFERENCE: 2-6)
- Check the setting of the “Master Tune” parameter. (→ REFERENCE: 2-4)
- Is voice microtuning affecting the pitch? (→ REFERENCE: 1-28)

Controllers don’t provide expected control.

- Are controllers firmly connected? (→ BASICS: 1-10)
- Have you changed the Assignable Controller settings? (→ REFERENCE: 2-10)

- Remember that when “Controller Hook” is “on”, controllers do not become effective until they move past the corresponding internal controller settings. (→ BASICS: 2-4)

Key-strike force does not affect velocity.

- Have you selected an appropriate velocity curve? (→ REFERENCE: 2-6)
- The “Fixed Velocity” parameter may be set to a value other than “off”. (→ REFERENCE: 2-6)

The VP1 fails to change voices in response to received program-change data, or fails to transmit program-change data to external devices.

- The “Program Change” parameter is probably set “off”. Change the setting to “on”. (→ REFERENCE: 2-8)
- Be sure that you are operating in PLAY mode. Sending or receiving of program-change data is available only in PLAY mode.

Problems caused by Inappropriate voice settings

No sound

- Is the scene correctly set to produce sound? (→ REFERENCE: 1-14)
- Is at least one element switched on? (→ REFERENCE: 1-17)
- Are “MaxNotes” parameters set above 0? (→ REFERENCE: 1-18)
- Are element “Volume” parameters set above 0? (→ REFERENCE: 1-22)
- Are “Note Limit” parameters set correctly? (→ REFERENCE: 1-27)
- Are OUTPUT/MIXER settings correct? (→ REFERENCE: 1-41)

Keys don’t produce the expected pitch.

- Is an element’s “Detune” parameter set to a value other than 0? (→ REFERENCE: 1-23)
- Is an element’s “NoteShift” parameter set to a value other than 0? (→ REFERENCE: 1-24)
- Is an element’s “Microtune” parameter set to a value other than “Equal”? (→ REFERENCE: 1-28)
- Are you applying a Pitch Change effect? (→ REFERENCE: 1-43)
- Have you assigned a pitch-bending parameter to any controller other than the Pitch wheel? (→ REFERENCE: 1-10)
- Note that the VP1 may occasionally produce incorrect pitch for notes in the extremely high or low ranges.

Distorted sound

- Layering of elements may sometimes produce distortion.
- Are you applying extreme equalization? (→ REFERENCE: 1-51)

Improper stereo effect

- Are “PanRngL” and “PanRngR” parameters set to -31 and +31, respectively? (→ REFERENCE: 1-25)
- If you are using a feedback delay effect, check that the effect setting is appropriate. (→ REFERENCE: 1-43)

Unexpected chordal sound

- Check the element's "MaxNotes" parameter. (→ REFERENCE: 1-18)
- Check the Key Assign Mode ("KAsMode") setting. (→ REFERENCE: 1-20)
- Have you set the voice's microtuning? (→ REFERENCE: 1-28)

Important

- Damage to the panel's real-wood finish generally requires replacement of the entire panel unit. Because all panels have a unique appearance, the color and grain of the replacement unit will be somewhat different from the original's.

- Yamaha recommends that you get a price estimate before authorizing any extensive repair work. Note that Yamaha assumes no financial liability for accidental damage that may occur to your VP1 while it is being transported for servicing.

Error Messages

When the VP1 encounters an error or warning condition, it displays a message on the LCD to alert you to the problem. Messages that begin with the word "Error!" generally indicate some type of operational error. A message that begins with the word "WARNING!" indicates a system condition — such as a failing battery — that requires attention.

After reading the message, Clear it from the screen by pressing [EXIT] then take appropriate counter measures to correct the problem.

Messages, their meanings, and appropriate responses are as follows.

Bad disk!

The floppy disk is bad. Use a different one.

Battery change!

The backup battery needs replacement.

Disk not ready!

There is no floppy disk in the drive. Insert a disk and try again.

Illegal file!

The disk file is not a VP1 file.

Illegal format!

The floppy disk is unformatted, or has been formatted to the wrong standard. Floppy disk must be formatted at the VP1. (→ REFERENCE: 3-12)

Media type error!

The floppy disk is the wrong type. The VP1 accepts only 2HD floppy disks.

Memory protected!

The VP1's "Memory Protect" is set "on". Change the setting to "off".
(→ REFERENCE: 2-13)

MIDI buffer full!

The MIDI receive buffer is full. Reduce the volume of data being transmitted.

MIDI data error!

An error was detected in MIDI data received from external device.
Check the external device and the MIDI cables.

Slave buffer full!

The slave CPU's receive buffer is full. This may be a hardware failure. Please consult of your Yamaha dealer or one of the authorized distributor listed at the back of this manual.

VSC error!

Problem in tone-generator board. This may be a hardware failure. Please consult of your Yamaha dealer or one of the authorized distributor listed at the back of this manual.

VSC protocol error!

Problem in communication between the tone-generator board and the main CPU. This may be a hardware failure. Please consult of your Yamaha dealer or one of the authorized distributor listed at the back of this manual.

Write protected!

The floppy disk's write-protect tab is in the "on" position. If you wish to alter the disk's contents, move the tab to the "off" position.

Specifications

Functions

■ Tone Generation

Tone-Generator Section

F/VA (free oscillation type / VA synthesis) system
Up to four elements per voice
Receive channel can be set separately for each element.

Maximum Polyphony

16 notes

Effects Section

32 effect types (reverb, delay, chorus, etc.), 4-band equalizer

■ Memory

Internal memory

64 voices (4 banks × 16 voices)

Disk (3.5inch 2HD)

File holds all initial factory settings (64 voices + system data)
Three download modes: all data, selected bank, selected voice

■ Keyboard

76 notes (C scale, FS type)
Includes velocity, channel aftertouch

■ Other Functions

Quick Edit
Scene Control
Zoned Aftertouch

Controllers

■ Controllers

Pitch wheel	(× 1)
Modulation wheels	(× 2)
Modulation ball	(× 1)
Volume slider	(× 1)
Quick-edit sliders	(× 4)
Continuous sliders	(× 2)
Scene-control slider	(× 1)
Dial	(× 1)
LCD contrast knob	(× 1)

■ Panel switches

Program Change	(× 16)	
Bank Select	(× 4)	
Function	(× 8)	
Enter	(× 1)	
Exit	(× 1)	
Cursor	(× 4)	
Inc / Yes	(× 1)	
Dec / No	(× 1)	
Play	(× 1)	
System	(× 1)	
Disk	(× 1)	
Store	(× 1)	
Compare	(× 1)	
Quick Edit Select	(× 2)	
Scene 1 ~ 3	(× 3)	
	46 (total)	

Display

■ LCD

240 × 64-dot backlit graphic LCD

■ LEDs

Program Change	(× 16)	Red
Bank Select	(× 4)	Red
Play	(× 1)	Red
System	(× 1)	Red
Disk	(× 1)	Red
Store	(× 1)	Red
Compare	(× 1)	Red
Scene 1 ~ 3	(× 3)	Red + Green
Controller	(× 12)	Red + Green
Quick Edit Value	(× 32)	Red
Quick Edit Parameters	(× 4)	Orange (Back Light)
	76 (total)	

Connectors

■ Front

Stereo-headphone jack
Breath-controller jack

■ Rear

OUTPUT jacks	(× 2)	L/Mono and R
ELEMENT jacks	(× 4)	1, 2, 3, 4
Foot-controller jacks	(× 2)	1, 2

Foot-volume jack	(× 1)
Sustain footswitch	(× 1)
Portamento footswitch	(× 1)
Scene-control foot controller	(× 1)
MIDI IN	
MIDI OUT	
MIDI THRU	

Output Levels

Stereo output

+1.5 dBm ± 2dBm (10Ω under load)

ELEMENT output

-4.0 dBm ± 2dBm (10Ω under load)

Headphone output

+6.5 dBm ± 2dBm (150Ω under load)

Power

74W (120V, 220-240V)

Dimensions and Weight

Dimensions

1322W x 456D x 143H (mm)

Weight

28.4kg

Accessories

■ Power cable	(× 1)
■ FC7 foot controllers	(× 2)
■ FC4 footswitch	(× 1)
■ Factory-set floppy disk	(× 1)
■ User's Manual	(× 1)

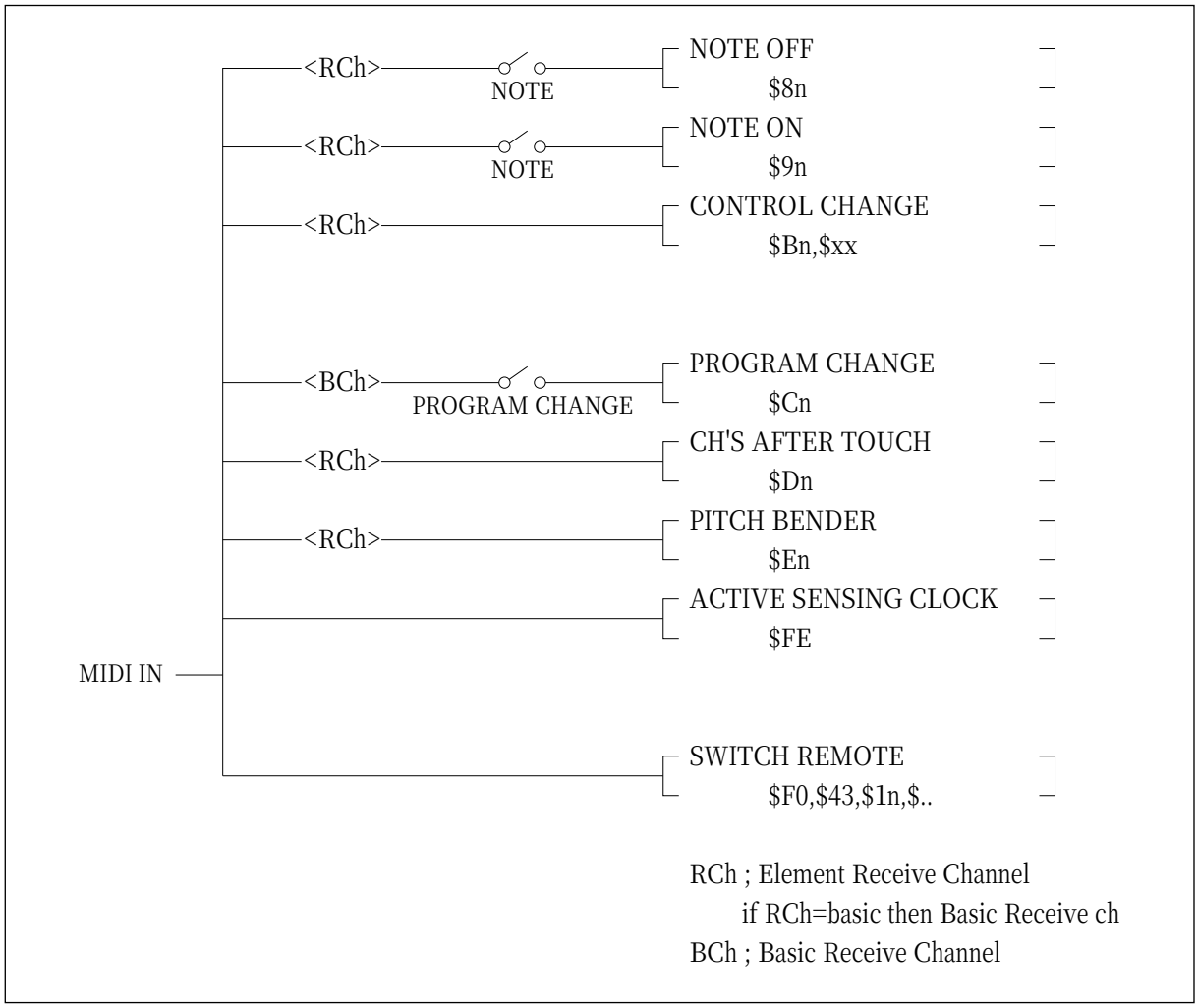
(Yamaha reserves the right to change product specifications and appearance without notice for purposes of product improvement.)

MIDI Data Format

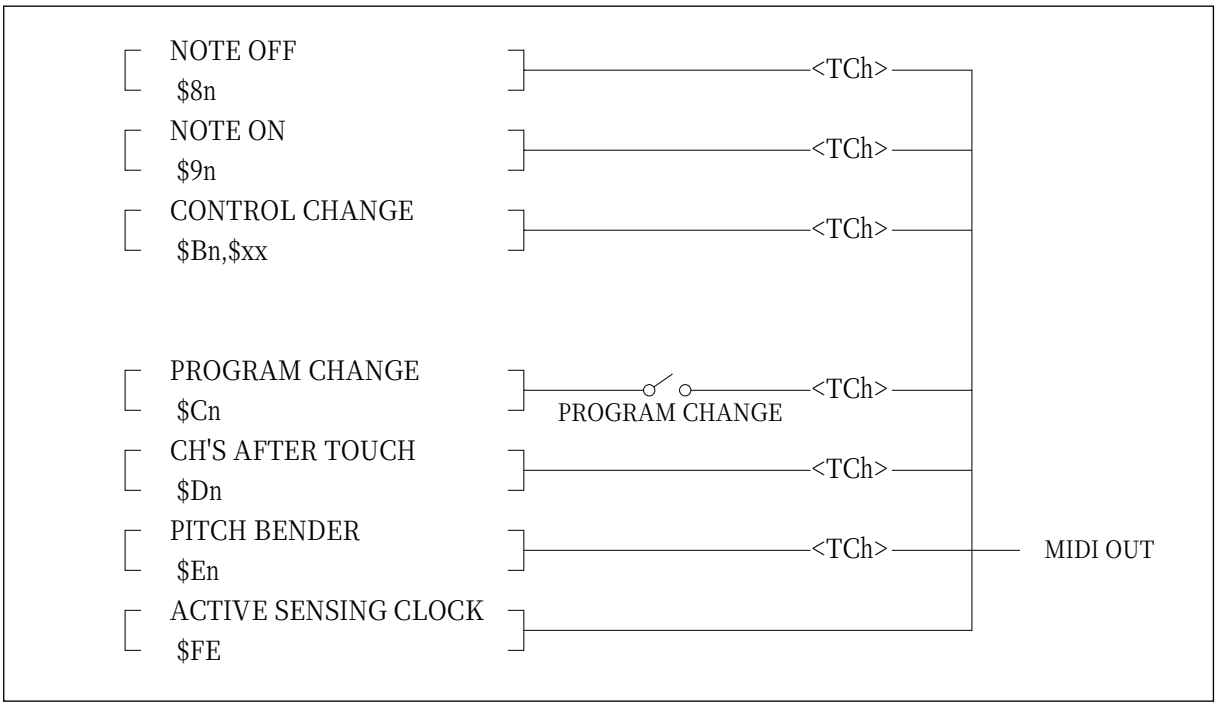
1. Synthesizer Mode

■ 1-1 MIDI Transmission Flowcharts

<Receiving conditions>



<Sending conditions>



■ 1-2 Channel Messages

1.2.1 Sending

1.2.1.1 Note ON/OFF

Transmittable note range: E0(28)...G6(103), when Transpose = 0
C-2(0)...G8(127), when Transpose is nonzero

Velocity range: 1...127

1.2.1.2 Control Change

Action of following controllers and data-edit functions generates corresponding MIDI data.

Ctrl#	Parameter	Data Range
1	Modulation Wheel	0 ~ 127
2	Breath Controller	0 ~ 127
4	Foot Controller 1	0 ~ 127
7	Foot Volume	0 ~ 127
64	Sustain Switch	0 , 127
65	Poratamento Switch	0 , 127

Also: Modulation Wheel 2, Foot Controller 2, Modulation Ball, Scene Controller, Continuous Sliders (1,2), Quick Edit Sliders (1,2,3,4). Data for these controllers is output using control numbers assigned by the SYSTEM mode's ASSIGNABLE CONTROLLERS function. Available control numbers are 1 ~ 31, 33 ~ 119.

1.2.1.3 Program Change

The VP1 transmits Program Change data when a new voice is selected. Voices A01 through D16 generate Program Change numbers 0 through 63, respectively.

1.2.1.4 Pitch-bend

Transmitted using 7-bit resolution.

1.2.1.5 Aftertouch

The VP1 transmits MIDI data in response to aftertouch operation.

1.2.1.6 Channel-mode messages

Not transmitted.

1.2.2 Receiving

1.2.2.1 Note ON/OFF

Receivable note range: C-2...G8

Velocity range: 1...127

1.2.2.2 Control Change

MIDI input can control the following parameters.

Ctrl#	Parameter	Data Range
1	Modulation Wheel	0 ~ 127
2	Breath Controller	0 ~ 127
4	Foot Controller 1	0 ~ 127
7	Foot Volume	0 ~ 127
64	Sustain Switch	0 , 127
65	Poratamento Switch	0 , 127

Also: Modulation Wheel 2, Foot Controller 2, Modulation Ball, Scene Controller, Continuous Sliders (1,2), and Quick Edit Sliders (1,2,3,4). Data for these parameters can be received using control numbers assigned by the SYSTEM mode's ASSIGNABLE CONTROLLERS function. Available control numbers are 1 ~ 31, 33 ~ 119.

1.2.2.3 Program Change

Program Change values 00 through 63 select the corresponding voice (A01 through D16). Program Change values 64 through 127 are ignored.

1.2.2.4 Pitch-bend

Only the MSB is effective.

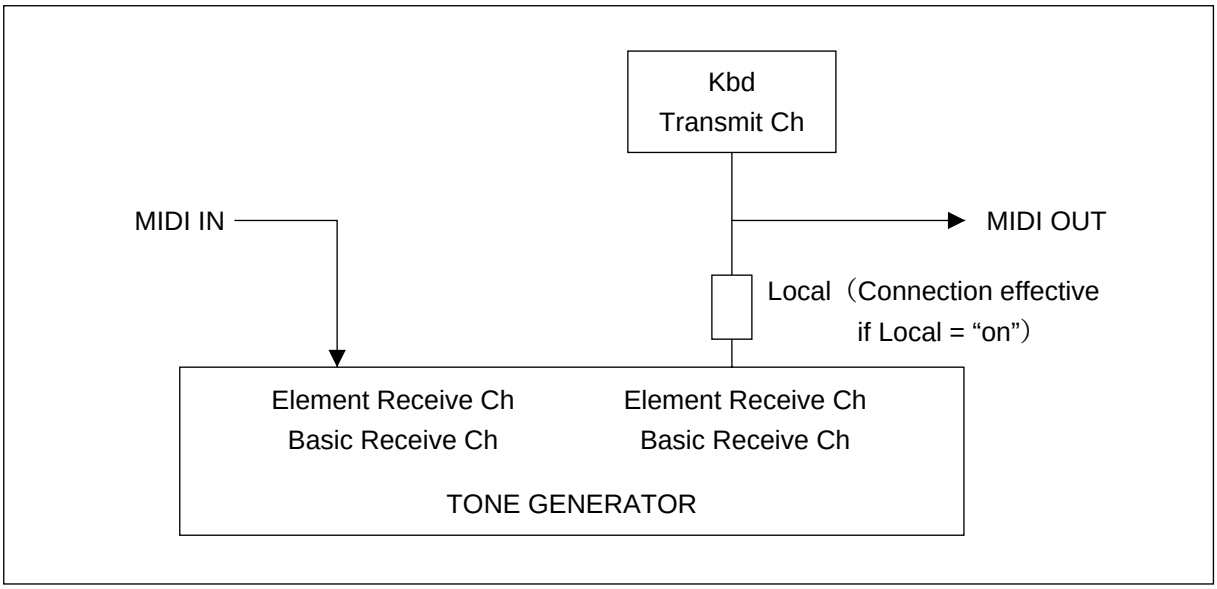
1.2.2.5 Aftertouch

Received aftertouch data is effective.

1.2.2.6 Channel-mode messages

Ignored.

1.2.3 Conceptual Diagram of Keyboard/Tone-Generator Connection



Note 1:

The keyboard will produce sound for an element only if one of the following conditions holds: a) the Element Receive Channel and Kbd Transmit Channel match; b) the Element Receive Channel is set to “basic”, and the Basic Receive Channel and Kbd Transmit Channel match; c) the Element Receive Channel is set to “basic” and the Basic Receive Channel is set to “omni” or “keyboard”. If the Element Receive Channel is set to “basic” and the Basic Receive Channel is set to “keyboard”, the element can be played only through the keyboard; it will not respond to incoming MIDI data.

Note 2:

The VP1 distinguishes between keyboard and MIDI Note-On data.

Except in the case of sustain-switch data, the VP1 does not distinguish between keyboard controller data and MIDI controller data (control-change data, aftertouch data, pitch-bend data, etc.).

2. System-Exclusive Messages

■ 2-1 Parameter Changes

The VP1 accepts only one type of parameter-change data, as indicated below. The data can control screen operation in the same way as the corresponding hardware switches on the VP1.

1) Switch-Remote Parameter Changes

The VP1 receives switch-on data only; it does not recognize switch-off data. For switch correspondence, refer to Table 1 on the next page.

11110000	F0	
01000011	43	
0001nnnn	nnnn	= don't care
01000001	41	
00000000	00	
00000000	00	
00000000	00	
0ppppppp	ppppppp	= N2 (See Table 1)
00000000	00	
0vvvvvvv	vvvvvvv	= Data Value
11110111	F7	

You can use the above type of message to remotely control all VP1 panel switches other than the POWER switch. Parameter-change data is receive-only.

■ 2-2 Bulk Dump

The VP1 does not support this message.

3. Active Sensing

a) Sending

Transmits FE approximately once every 170msec.

b) Receiving

If the VP1 does not receive MIDI data within approximately 300msec following FE, it clears the MIDI receive buffer and cancels any remaining KEY ON data.

<Table 1>

MIDI Parameter Change Switch Remote

$F0,$43,$1n,$41,$00,$00,$00,N2,$00,V2,$F7

Symbols: n ; Device Number
N2 ; Parameter Number
V2 ; Parameter Value -Data Range ; off($00 ~ $3F),on($40 ~ $7F)

	N2	Sw. #	Note
0	00	PSW 1	BANKA
1	01	PSW 2	BANKB
2	02	PSW 3	BANKC
3	03	PSW 4	BANKD
4	04	PSW 5	SCENE1
5	05	PSW 6	SCENE2
6	06	PSW 7	SCENE3
7	07	PSW 8	RESERVED
8	08	PSW 9	PGM1
9	09	PSW10	PGM2
10	0A	PSW11	PGM3
11	0B	PSW12	PGM4
12	0C	PSW13	PGM5
13	0D	PSW14	PGM6
14	0E	PSW15	PGM7
15	0F	PSW16	PGM8
16	10	PSW17	PGM9
17	11	PSW18	PGM10
18	12	PSW19	PGM11
19	13	PSW20	PGM12
20	14	PSW21	PGM13
21	15	PSW22	PGM14
22	16	PSW23	PGM15
23	17	PSW24	PGM16
24	18	PSW25	F1
25	19	PSW26	F2
26	1A	PSW27	F3
27	1B	PSW28	F4
28	1C	PSW29	F5
29	1D	PSW30	F6
30	1E	PSW31	F7
31	1F	PSW32	F8
32	20	PSW33	INC/YES
33	21	PSW34	DEC/NO
34	22	PSW35	ENTER
35	23	PSW36	EXIT
36	24	PSW37	CSR_DOWN
37	25	PSW38	CSR_LEFT
38	26	PSW39	CSR_RIGHT
39	27	PSW40	CSR_UP
40	28	PSW41	QED_SEL_UP
41	29	PSW42	QED_SEL_DOWN
42	2A	PSW43	PLAY
43	2B	PSW44	SYSTEM
44	2C	PSW45	DISK
45	2D	PSW46	COMPARE
46	2E	PSW47	STORE

“on” is effective;
“off” is ignored

YAMAHA [Virtual Acoustic Synthesizer] Date:04-FEB-1994
Model VP1 MIDI Implementation Chart Version : 1.0

Function ...		Transmitted	Recognized	Remarks
Basic	Default	1 - 16	1 - 16	Memorized
Channel	Changed	1 - 16	1 - 16	
Mode	Default	3	1 - 4	Memorized
	Messages	x	x	
	Altered	**********	x	
Note Number		0 - 127	0 - 127	Transpose
	True voice	**********	1 - 127	switch
Velocity	Note ON	o 9nH,v=1-127	o v=1-127	
	Note OFF	o 8nH,v=1-127	o v=1-127	
After Touch	Key's	x	x	
	Ch's	o	o	
Pitch Bender		o	o 0-12 semi	7 bit resolution
Control Change	1	o	o	M.Wheel 1
	2	o	o	Breath cont.
	4	o	o	Foot cont.1
	7	o	o	Main volume
	64	o	o	Sustain
	65	o	o	Portamento SW
	1-31,33-119	o	o	Assignable *1
Prog Change		o 0 - 63	o 0 - 63	
	True #	**********	0 - 63	
System Exclusive		x	o	Switch remote
System Common	Song Pos	x	x	
	Song Sel	x	x	
	Tune	x	x	
System Real Time	Clock	x	x	
	Commands	x	x	
Aux Mes-sages	Local ON/OFF	x	x	
	All Notes OFF	x	x	
	Active Sense	o	o	
	Reset	x	x	

Notes: *1 Assignable controllers are M.Wheel 2,Foot cont.2,M.Ball X, M.Ball Y,CS1,CS2,QS1,QS2,QS3,QS4,Scene.

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO o : Yes
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO x : No

Index

A

Appendix ..... R : App - 1
ASSIGNABLE CONTROLLERS ..... R : 2 - 10
AT FOLLOW ..... B : 3 - 18
AT Scene SW ..... R : 2 - 4
Audi ..... R : 1 - 38, R : 1 - 50, R : 1 - 53
Audition ..... R : 1 - 38
audition ..... R : 1 - 50, R : 1 - 53

B

basic ..... R : 1 - 19
Basic Receive Channel ..... R : 2 - 8
Breath-controller ..... B : 1 - 8

C

C3 key mark ..... B : 1 - 4
Changing Multiple-Choice Settings ..... B : 3 - 25
Changing Numerical Settings ..... B : 3 - 25
Channel aftertouch ..... B : 1 - 17
COMPARE ..... B : 1 - 3, R : 1 - 56
Comparing ..... B : 3 - 30
Connecting the Power Cord ..... B : 1 - 9
Connecting the System ..... B : 1 - 9
CONT ..... B : 1 - 4
Continuous sliders ..... B : 1 - 3, B : 3 - 9
Control change ..... B : 1 - 17
Control Range ..... R : 1 - 12
CONTROLLER ASSIGN TABLE ..... R : 1 - 10
Controller Hook ..... R : 2 - 4
Controller Hook Function ..... B : 3 - 14
Controller Init ..... R : 2 - 4
Controller Initialization Function ..... B : 3 - 15
Controller LEDs ..... B : 3 - 15
CONTROLLER VALUE VIEW ..... R : 1 - 6
Controllers ..... B : 3 - 8
Copying ..... B : 3 - 30
Cr ..... R : 1 - 12
CS1 and CS2 ..... B : 1 - 3
current ..... R : 1 - 15
Cursor button ..... B : 1 - 5

D

DEC/NO ..... B : 1 - 5
Detune ..... R : 1 - 23
Dial ..... B : 1 - 5
Direct ..... B : 3 - 4
DISK Mode ..... B : 3 - 22
DISK-mode ..... R : 3 - 2
Display ..... B : 1 - 4, R : 2 - 13
Drct ..... R : 1 - 41
Driver ..... B : 3 - 2, B : 3 - 3

E

EF DEPTH ..... B : 3 - 18
EFFECT ..... R : 1 - 43
EFFECT COPY ..... R : 1 - 50
Effect Types ..... R : 1 - 44
Effects ..... B : 3 - 5
Effects Parameters ..... R : 1 - 45
EG ATTACK ..... B : 3 - 19
EG DECAY ..... B : 3 - 19
EG RELSE ..... B : 3 - 19
EG SUSTN ..... B : 3 - 19
EJECT ..... B : 1 - 8
ELEMENT ..... B : 1 - 6
Element Copy ..... R : 1 - 38
ELEMENT ON/OFF ..... B : 3 - 31
ELEMENT output ..... B : 3 - 4
ELEMENT SELECT ..... B : 3 - 31
Element Switch ..... R : 1 - 17
Elements ..... B : 3 - 4
ENTER ..... B : 1 - 5
Entering Characters ..... B : 3 - 26
EQ HI-MID ..... B : 3 - 18
EQ HIGH ..... B : 3 - 18
EQ LO-MID ..... B : 3 - 18
EQ LOW ..... B : 3 - 18
Equal ..... R : 1 - 28
EQUALIZER ..... R : 1 - 51
Equalizer ..... B : 3 - 5
EQUALIZER COPY ..... R : 1 - 53
Error Messages ..... R : App - 9
EXIT ..... B : 1 - 5

F

F/VA Sound Synthesis ..... B : 3 - 2
F1 to F8 ..... B : 1 - 4
feedback ..... B : 3 - 3
fingered ..... R : 1 - 30
Fixed Velocity ..... R : 2 - 7
Floppy Disks ..... B : 3 - 7

Floppy-Disk Drive ..... B : 1 - 8
FOOT CONTROLLER ..... B : 1 - 7
FOOT VOLUME ..... B : 1 - 7
FORMAT ..... R : 3 - 12
free-oscillating VA ..... B : 3 - 2
Freq. ..... R : 1 - 51
fulltime ..... R : 1 - 30
Function button ..... B : 1 - 4
Function List ..... R : App - 2

G

Gain ..... R : 1 - 51
GREETING MESSAGE ..... R : 2 - 12

H

Headphone ..... B : 1 - 8

I

In-Use LED ..... B : 1 - 8
INFORMATION DISPLAY ..... R : 1 - 5
Initial Scene ..... R : 1 - 14

K

KAsMode ..... R : 1 - 20
Kbd Transmit Channel ..... R : 2 - 8
Key Assign Mode ..... R : 1 - 20
KEYBOARD SETTINGS ..... R : 2 - 6
KEYBOARD TRANSMIT CHANNEL ..... R : 1 - 7
Keyboard Transpose ..... R : 2 - 6
Kirnberger ..... R : 1 - 28

L

LFO DELAY ..... B : 3 - 19
LFO DEPTH ..... B : 3 - 18
LFO HOLD ..... B : 3 - 19
LFO SPEED ..... B : 3 - 18
LOAD BANK ..... R : 3 - 5
LOAD VOICE ..... R : 3 - 7
LOAD ALL DATA ..... R : 3 - 4
Loading from disk ..... B : 3 - 7
Local ..... R : 2 - 8

M

Master Tune ..... R : 2 - 4
Max Notes ..... R : 1 - 18
Memory Configuration ..... B : 3 - 6
Memory Protect ..... R : 2 - 13
Microtuning ..... R : 1 - 28
MIDI ..... B : 1 - 7, B : 1 - 17
MIDI Data Format ..... R : App - 14
MIDI Implementation Chart ..... R : App - 20
MIDI Quick Edit Control ..... B : 3 - 20
MIDI SETTINGS ..... R : 2 - 8
MISCELLANEOUS SETTINGS ..... R : 2 - 13
MIXER ..... R : 1 - 41
Mixer ..... B : 3 - 5
MODULATION ..... B : 1 - 2
MODULATION BALL ..... B : 1 - 2
Modulation Ball ..... B : 3 - 9
monophonic ..... R : 1 - 18
Moving the Cursor ..... B : 3 - 24

N

Note data ..... B : 1 - 17
Note Limit ..... R : 1 - 27
Note On/Off ..... R : 2 - 8
Note Shift ..... R : 1 - 24

O

Org ..... R : 1 - 40, R : 1 - 50, R : 1 - 53
OUTPUT ..... B : 1 - 6

P

Pan Range ..... R : 1 - 25
Parameters ..... R : 1 - 10
PB Curve ..... R : 1 - 33
PB Range ..... R : 1 - 32
Physical Characteristics of Struck-String Instrume .... B : 3 - 2
PITCH ..... B : 1 - 2
Pitch-bend ..... B : 1 - 17
PLAY ..... B : 1 - 3, R : 1 - 4
PLAY Mode ..... B : 3 - 22
PLAY mode ..... R : 1 - 2
Playing the Demos ..... B : 2 - 8
POR TIME ..... B : 3 - 18
PORTAMENTO ..... B : 1 - 7
Portamento Mode ..... R : 1 - 30
Portamento Resolution ..... R : 1 - 31
POWER ..... B : 1 - 6
Power-cord ..... B : 1 - 6
Program ..... B : 1 - 5
Program Change ..... R : 2 - 8

Program change ..... B : 1 - 17

Q

Q ..... R : 1 - 51
QS ..... B : 1 - 4
QUICK EDIT ..... B : 1 - 4
Quick Edit ..... B : 2 - 6, B : 3 - 16
Quick-edit sliders ..... B : 1 - 4

R

Rear Panel ..... B : 1 - 6
Receive Channel ..... R : 1 - 19
RENAME ..... R : 3 - 11
Returning to Previous Screen ..... B : 3 - 24
Rtrn ..... R : 1 - 41

S

SAVE ALL DATA ..... R : 3 - 9
Saving to disk ..... B : 3 - 7
SCENE ..... B : 1 - 3, B : 1 - 7, R : 1 - 14
SCENE CONTROLLER ..... B : 1 - 3
Scene Controller ..... B : 3 - 12
Scene Copy Mode ..... R : 2 - 13
Scene LEDs ..... B : 3 - 13
Scenes ..... B : 3 - 11
Selecting a Function ..... B : 3 - 24
Selecting a Voice ..... B : 3 - 23
self-oscillating VA ..... B : 3 - 2
Send ..... R : 1 - 41
Send-to-effects ..... B : 3- 4
STORE ..... B : 1 - 3, R : 1 - 54
Storing ..... B : 3 - 28
String ..... B : 3 - 2, B : 3 - 3
SUSTAIN ..... B : 1 - 7
Sustain ..... R : 1 - 37
Swapping Scenes ..... R : 1 - 15
Switching the Mode ..... B : 3 - 23
System Data ..... B : 3 - 6
SYSTEM Mode ..... B : 3 - 22
SYSTEM-mode ..... R : 2 - 2

T

TONE GENERATOR SETTINGS ..... R : 2 - 4
Top Panel ..... B : 1 - 2
Touch EG ..... B : 3 - 10

V

Vallotti and Young ..... R : 1 - 28
VEL SENS ..... B : 3 - 18
Velocity Curve ..... R : 2 - 6
Voice bank ..... B : 1 - 5
Voice Categories ..... B : 3 - 21
Voice Data ..... B : 3 - 6
VOICE DIRECTORY ..... R : 1 - 8
Voice Editing ..... B : 3 - 27
voice number ..... B : 3 - 5
VOICE SETUP ..... R : 1 - 16
Voices ..... B : 3 - 5
VOLUME ..... B : 1 - 3
Volume ..... R : 1 - 22

W

Werckmeister ..... R : 1 - 28
write-protect tab ..... B : 1 - 8

Y

yamaha ..... R : 1 - 20

Z

Zoned Aftertouch Mode ..... R : 1 - 35
Zoned Aftertouch Split ..... R : 1 - 36